

DEPARTMENT OF TRANSPORTATION**Research and Special Programs Administration****49 CFR Parts 171, 172, 173, 175, 176, 178 and 180**

[Docket No. RSPA-04-17036 (HM-215G)]

RIN 2137-AD92

Harmonization With the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions**AGENCY:** Research and Special Programs Administration (RSPA), DOT.**ACTION:** Final rule.

SUMMARY: RSPA is amending the Hazardous Materials Regulations (HMR) to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. Because of recent changes to the International Maritime Dangerous Goods Code (IMDG Code), the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), and the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations), these revisions are necessary to facilitate the transport of hazardous materials in international commerce.

DATES: The effective date of these amendments is January 1, 2005

Delayed Compliance Date: Unless otherwise specified, compliance with the amendments adopted in this final rule is required beginning January 1, 2006.

Incorporation by Reference Date: The incorporation by reference of the publications adopted in § 171.7 of this final rule have been approved by the Director of the Federal Register as of January 1, 2005.

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I. Background

On December 21, 1990, RSPA (we) published a final rule (Docket HM-181; 55 FR 52402) based on the UN Recommendations, which comprehensively revised the Hazardous Materials Regulations (HMR), 49 CFR Parts 171 to 180, for harmonization with international standards. Since publication of the 1990 final rule we have issued five additional international harmonization final rules (Dockets HM-215A, 59 FR 67390; HM-215B, 62 FR 24690; HM-215C, 64 FR 10742; HM-215D, 66 FR 33316; and HM-215E, 68 FR 44992). The rules provided additional harmonization with international transportation requirements by more fully aligning the HMR with the corresponding biennial updates of the UN Recommendations, the IMDG Code and the ICAO Technical Instructions.

The UN Recommendations are not regulations, but rather are recommendations issued by the UN Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labeling (GHS). These recommendations are amended and updated biennially by the UN Committee of Experts. They serve as the basis for National, regional, and international modal regulations; specifically, the IMDG Code issued by the International Maritime Organization (IMO), and the ICAO Technical Instructions issued by the ICAO. In 49 CFR 171.12, the HMR authorize domestic transportation of hazardous materials shipments prepared in accordance with the IMDG Code if all or part of the transportation is by vessel, subject to certain conditions and limitations. In § 171.11, subject to certain conditions and limitations, the HMR authorize the offering, acceptance

and transport of hazardous materials by aircraft, and by motor vehicle either before or after being transported by aircraft, provided the shipment is in accordance with the ICAO Technical Instructions.

The continually increasing amount of hazardous materials transported in international commerce warrants the harmonization of domestic and international requirements to the greatest extent possible. Harmonization serves to facilitate international transportation and at the same time ensures the safety of people, property and the environment. While the intent of the harmonization rulemakings is to align the HMR with international standards, we review and consider each amendment on its own merit. Each amendment is considered on the basis of the overall impact on transportation safety and the economic implications associated with its adoption into the HMR. Our goal is to harmonize without diminishing the level of safety currently provided by the HMR and without imposing undue burdens on the regulated public. In our efforts to continue to align the HMR with international requirements, this final rule incorporates changes into the HMR based on the Thirteenth Revised Edition of the UN Recommendations, Amendment 32 to the IMDG Code, and the 2005-2006 ICAO Technical Instructions, which become effective January 1, 2005. Petitions for rulemaking concerning harmonization with international standards and additional measures concerning facilitation of international transportation are also addressed in this final rule and serve as the basis of certain amendments. Other amendments are based on feedback from the regulated industry, other DOT modal administrations and our initiative. Also included are various editorial clarifications. Unless otherwise stated, the revisions are for harmonization with international standards.

II. Overview of Changes in This Final Rule

Amendments to the HMR in this final rule include, but are not limited to the following:

—Amendments to the Hazardous Materials Table (HMT) which add, revise or remove certain proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, bulk packaging requirements, passenger and cargo aircraft maximum quantity limitations and vessel stowage provisions.

- Amendments to the List of Marine Pollutants.
- Revisions and additions of special provisions.
- Removal of the air eligibility marking requirement.
- Addition of a “KEEP AWAY FROM HEAT” marking requirement for packages offered for transportation by air.
- Amendment to require that aerosols that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means.
- A grandfather provision to allow the shipment of materials classified as corrosive to steel or aluminum under ASTM G 31–72.
- A provision to require that the word “overpack” be marked on overpacks to indicate that inside packages comply with prescribed specifications.
- An amendment to the criteria for classification of materials that are corrosive to metals.
- Revision of the limited quantity provisions for Class 6.1, PG II materials and for materials with a subsidiary hazard of 6.1, PG II.
- Amendments to the packaging requirements for materials classified as Division 6.1, Packing Group I, Hazard Zone A or Hazard Zone B.
- Revision of the organic peroxide packaging requirements in order to have one consolidated packaging section for organic peroxides. The revised section will include three separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs, respectively. Additionally, the packaging tables will be updated through the amendments to the organic peroxide requirements that will add, revise, or delete certain entries in the organic peroxide tables.

III. Overview of Amendments Not Being Considered for Adoption in This Final Rule

This final rule makes changes to the HMR based on amendments to the Thirteenth Revised Edition of the UN Recommendations, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. However, we are not adopting all of the amendments to those documents into the HMR. In many cases, amendments to the international regulation have not been adopted because of the framework or structure of the HMR. In several cases, we are handling certain amendments in separate rulemakings.

For example, all amendments related to infectious substances are being handled under Docket HM–226A. In some instances, such as the amendment to ICAO Technical Instructions to allow certain oxygen generators aboard passenger carrying aircraft, we do not believe the amendment to be in the interest of public safety.

One of the goals of this rulemaking is to continue to maintain consistency between the HMR and the international requirements. We are not striving to make the HMR identical to the international regulations but rather striving to remove or avoid potential barriers to international transportation.

Below is a listing of those significant amendments to the international regulations that we have not included in this final rule with a brief explanation of why the amendment was not included:

- Requirements for infectious substances and genetically modified micro-organisms;
[Amendments to the HMR related to infectious substances will be addressed in a future rulemaking under Docket HM–226A. Several other federal agencies regulate genetically modified micro-organisms; thus we do not plan to adopt provisions for their transport in the HMR.]
- Compressed gas cylinders;
[Amendments to the HMR related to compressed gas cylinders will be addressed in a future rulemaking under Docket HM–220E.]
- Environmentally hazardous substances;
[Delay in action pending further amendments to the international regulations.]
- Hazardous materials security;
[Amendments to the HMR related to the UN Model Regulation’s hazardous materials security requirements were promulgated in a rulemaking under the HM–232 Docket series.]
- Requirements for radioactive materials;
[Amendments to the HMR related to Class 7 (radioactive) materials are being addressed in a rulemaking under the HM–230 Docket series.]
- Non-specification bulk packagings;
[We are not adopting the new requirements in the UN Recommendations for non-specification bulk packagings including the additional inspection, testing and marking requirements. We are unsure about the cost impacts of imposing these additional amendments and, therefore, are not adopting any additional amendments at this time.]

- The reference to EN 10028–3, Part 3 for defining steel grain size relevant to the definition of fine grain steel;

[We do not believe there is a need to adopt the European standard EN 10028–3, Part 3 because this standard is equivalent to ASTM E 112–96 (IBR, see § 171.7 of this subchapter). In addition, the ASTM standard is currently referenced in the HMR and is more commonly used and recognized in the U.S.]

- Bulk authorization for UN0331, UN0332 and UN3375;

[For several years, we have authorized, under exemption, the transport of certain blasting agents in bulk packagings. We are currently reviewing those exemptions to determine if they should be included in the HMR. The amendments in the UN Recommendations related to the bulk authorizations for UN0331, UN0332 and UN3375 will be included in that review.]

- The removal of wooden barrel requirements;

[The removal of the wooden barrel requirements (2C1 and 2C2) may be considered in a future rulemaking.]

- The 24-hour gasket relaxation requirement;

[A requirement that removable head packagings for liquids not be drop tested until at least 24 hours after filling and closing to allow for any possible gasket relaxation was adopted in the thirteenth revised edition of the UN Model Regulations. We have conducted testing in coordination with drum manufacturers and have determined that this requirement is not substantiated by the results of the tests conducted. Therefore, we are not adopting into the HMR amendments relative to the 24-hour gasket relaxation requirement. We also opposed this requirement when it was considered by the UN TDG Sub-Committee.]

- Authorization to transport protective breathing equipment (PBE’s) with an oxygen generator as cargo onboard a passenger-carrying aircraft.

[We do not believe that oxygen generators should be transported aboard passenger carrying aircraft. Therefore, we are not adopting the ICAO amendment that would allow oxygen generators in protective breathing equipment to be transported in passenger carrying aircraft.]

IV. Section-By-Section Review

Part 171

Section 171.7

Paragraph (a)(3) (incorporation by reference materials) is updated to include the most recent editions of the

ICAO Technical Instructions, the IMDG Code and the UN Recommendations. The updated editions of these standards become effective January 1, 2005. Additionally, the International Maritime Organization (IMO) recommends authorizing a one-year transition period, with a delayed compliance date of January 1, 2006, for the use of the updated edition (Amendment 32) of the IMDG Code.

The updated additions are as follows:

- The ICAO Technical Instructions, 2005–2006 Edition.
- The IMDG Code, Amendment 32.
- The UN Recommendations, Thirteenth Edition.
- The UN Manual of Tests and Criteria, 4th Revised Edition.

Paragraph (b) (list of informational materials not requiring incorporation by reference) is revised by adding an additional reference for a new method for determining the size of an emergency-relief device for portable tanks transporting organic peroxides. This revision is based on a petition for rulemaking numbered P-1428. The petition was submitted by the Organic Peroxides Producers Safety Division of the Society of the Plastics Industry, Inc.

One commenter recommended that we revise the “Note to Paragraph (h)(3)(vi)” in § 173.225 to maintain format consistency with the incorporation by reference entry for “Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology” found in § 171.7(a). We disagree. The reference to a second example of a test method for venting sizing is not found in § 171.7(a) as a material incorporated by reference. Rather, it is found in § 171.7(b) as informational material not requiring incorporation by reference. Therefore, for clarification we are revising § 171.7(b) to include the reference to the “*American Institute of Chemical Engineers Process Safety Progress Journal*.” In addition, we are revising the “Note to Paragraph (h)(3)(vi)” in § 173.225 to include a reference to § 171.7(b), *list of informational materials not requiring incorporation by reference*.

Section 171.8

The definition for “salvage packaging” is revised to include the term “non-conforming.” The term “non-conforming” was added to the definition by the UN Committee of Experts in December 2000 to accommodate the use of salvage packaging for. Occasionally an undamaged package is found to be tested to a performance level which is less than that required for the specific

substance it contains (e.g., a drum tested to PG II standards containing a PG I substance). In other instances, the package is found to be a non-performance tested packaging containing a regulated substance. In these situations, it may not be safe or practical to transfer the material to the correct packaging to continue on to the consignee in order to ensure compliance with the HMR. Therefore, the use of salvage packaging to contain “non-conforming” packages will minimize the risk to those handling the package during its transport back to the shipper or to an appropriate disposal location.

Section 171.11

Paragraph (d)(15) is revised to clarify that the limitations therein also apply to oxygen generators contained in personal breathing equipment. In addition, paragraph (d)(17) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.12

In § 171.12, paragraph (b)(20) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.12a

Paragraph (a) is revised to clarify the requirements for the return to Canada of bulk packagings that correspond to DOT or UN Specifications. Paragraph (b)(9)(ii) is revised to indicate that the shipping certification must be completed for shipments from Canada that enter the U.S. Paragraph (b)(18) is revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.22 must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d).

Section 171.14

Paragraphs (d) and (d)(1) are revised to authorize a delayed implementation date for the amendments in this final rule. The effective date of this final rule is January 1, 2005. We are also, authorizing a delayed compliance date of January 1, 2006, which is comparable to the transitional provisions provided in the final rule published under Docket HM-215E. The delayed mandatory

compliance date offers sufficient time to implement the new requirements.

Paragraph (d)(2) is revised to authorize certain intermixing of old and new requirements.

Part 172

Section 172.101

The regulatory text preceding the Hazardous Materials Table is revised as follows:

Paragraph (c)(11) and the corresponding note to paragraph (c)(11) are amended to revise a section reference. The reference to § 173.225(c) in the first sentence is revised to read § 173.225(b) and the reference to § 173.225(c)(2) in the note to paragraph (c)(11) is revised to read § 173.225(b)(2).

Paragraph (d)(4) is revised by adding a statement indicating that when the abbreviation “Comb liq.” is found in the “Hazard class or division” column of the Hazardous Materials Table (column 3), the material falls into the “Combustible liquid” hazard class.

Paragraph (i)(3) of this section is revised to specify that Column 7 of the Hazardous Materials Table contains additional bulk packaging authorizations and limitations for the use of UN portable tanks.

§ 172.101 The Hazardous Materials Table (HMT). In this final rule we made various amendments to the HMT. Readers should review all changes for a complete understanding of the Table amendments. The HMT has been reprinted in its entirety due to the numerous changes. Under this final rule the changes to the HMT for the purpose of harmonizing with international standards, unless otherwise stated, include, but are not limited to the following:

- We revised several entries by adding the qualifying word “liquid.” This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

UN1392	Alkaline earth metal amalgam
UN1420	Potassium metal alloys
UN1422	Potassium sodium alloys
UN1701	Xylol bromide
UN1742	Boron trifluoride acetic acid complex
UN1743	Boron trifluoride propionic acid complex
UN2235	Chlorobenzyl chlorides
UN2236	3-Chloro-4-methylphenyl isocyanate
UN2306	Nitrobenzotrifluorides
UN2445	Lithium alkyls
UN2552	Hexafluoroacetone hydrate
UN2937	alpha-Methylbenzyl alcohol

UN3276 Nitriles, toxic, n.o.s.

UN3278 Organophosphorus compound, toxic, n.o.s.

UN3280 Organoarsenic compound, n.o.s.

UN3282 Organometallic compound, toxic, n.o.s.

UN3281 Metal carbonyls, n.o.s.

• We revised several entries by adding the qualifying word "solid." This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

UN1445 Barium chlorate

UN1447 Barium perchlorate

UN1459 Chlorate and magnesium chloride mixture

UN1470 Lead perchlorate

UN1578 Chloronitrobenzenes

UN1579 4-Chloro-o-toluidine hydrochloride

UN1650 beta-Naphthylamine

UN1680 Potassium cyanide

UN1689 Sodium cyanide

UN1690 Sodium fluoride

UN1697 Chloroacetophenone

UN1709 2,4-Toluylenediamine

UN1812 Potassium fluoride

UN1843 Ammonium dinitro-o-cresolate

UN2074 Acrylamide

UN2239 Chlorotoluidines

UN2261 Xylenols

UN2446 Nitrocresols

UN2662 Hydroquinone

UN3283 Selenium compound, n.o.s.

• We revised several entries by removing the qualifying word "solid." This action provides consistency with the Thirteenth Revised Edition of the UN Recommendations. The affected entries are as follows:

UN1489 Potassium perchlorate, solid

UN1598 Dinitro-o-cresol, *solid*

UN1638 Mercury iodide, *solid*

UN1740 Hydrogendifluorides, n.o.s. *solid*

UN2439 Sodium hydrogendifluoride, *solid*

• We deleted several entries. This action removes from the HMR the solution form of entries that are not identified as solutions in the Thirteenth Revised Edition of the UN Recommendations. The deleted entries are as follows:

UN1489 Potassium perchlorate, solution

UN1598 Dinitro-o-cresol, *solution*

UN1638 Mercury iodide, *solution*

UN1740 Hydrogendifluorides, n.o.s. *solutions*

UN2439 Sodium hydrogendifluoride *solution*

• We revised the proper shipping name "Butadienes, stabilized," UN1010 to read "Butadienes, stabilized or Butadienes and hydrocarbon mixture, stabilized, *containing more than 40% butadienes.*"

• We revised the proper shipping name "Potassium hydrogendifluoride, *solid,*" UN1811 to read "Potassium hydrogendifluoride, *solid.*"

• We revised the proper shipping name "Refrigerating machines, *containing non-flammable, non-toxic, liquefied gas or ammonia solution (UN2672),*" UN2857 to read "Refrigerating machines *containing non-flammable, non-toxic gases or ammonia solutions (UN2672).*"

• We removed four references to IB52 and four references to T23 from column 7 of the HMT. This change is necessary because IB52 and T23 have been relocated to § 173.225. The affected entries are:

UN3109 Organic peroxide type F, liquid

UN3110 Organic peroxide type F, solid

UN3119 Organic peroxide type F, liquid, temperature controlled

UN3120 Organic peroxide type F, solid, temperature controlled

• IP5 is removed from column 7 of the HMT for the following UN entries:

UN1791 Hypochlorite solution

UN2014 Hydrogen peroxide, aqueous solution with not less than 20% but not more than 60% hydrogen peroxide (*stabilized as necessary*).

UN3149 Hydrogen peroxide and peroxyacetic acid mixture with acid(s), water and not more than 5% peroxyacetic acid.

• We deleted several entries. This action is consistent with the deletion of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations that we are proposing to adopt into the HMR. The entries affected are:

UN2003 Metal alkyls, water-reactive, n.o.s. or Metal aryls, water-reactive, n.o.s.

UN3049 Metal alkyl halides, water-reactive, n.o.s. or Metal aryl halides, water-reactive, n.o.s.

UN3050 Metal alkyl hydrides, water-reactive, n.o.s. or Metal aryl hydrides, water-reactive, n.o.s.

UN3207 Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.

UN3203 Pyrophoric organometallic compound, water-reactive, n.o.s., liquid Pyrophoric organometallic compound, water-reactive, n.o.s., solid

UN3372 Organometallic compound, solid, water-reactive, flammable, n.o.s.

• We added the following new entries. Many of these entries are the liquid or solid form of entries that are already listed in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. The new entries are as follows:

UN3377 Sodium perborate monohydrate

UN3378 Sodium carbonate peroxyhydrate

UN3379 Desensitized explosives, liquid, n.o.s.

UN3380 Desensitized explosives, solid, n.o.s.

UN3401 Alkali metal amalgam, solid

UN3402 Alkaline earth metal amalgam, solid

UN3403 Potassium metal alloys, solid

UN3404 Potassium sodium alloys, solid

UN3405 Barium chlorate solution

UN3406 Barium perchlorate solution

UN3407 Chlorate and magnesium chloride mixture solution

UN3408 Lead perchlorate solution

UN3409 Chloronitrobenzenes, liquid

UN3410 4-Chloro-o-toluidine hydrochloride solution

UN3411 beta-Naphthylamine solution

UN3413 Potassium cyanide solution

UN3414 Sodium cyanide solution

UN3415 Sodium fluoride solution

UN3416 Chloroacetophenone, liquid

UN3417 Xylol bromide, solid

UN3418 2,4-Toluylenediamine solution

UN3419 Boron trifluoride acetic acid complex, solid

UN3420 Boron trifluoride propionic, acid complex, solid

UN3421 Potassium hydrogendifluoride solution

UN3422 Potassium fluoride solution

UN3423 Tetramethylammonium hydroxide, solid

UN3424 Ammonium dinitro-o-cresolate solution

UN3425 Bromoacetic acid, solid

UN3426 Acrylamide solution

UN3427 Chlorobenzyl chlorides, solid

UN3428 3-Chloro-4-Methylphenyl isocyanate, solid

UN3429 Chloro-toluidines, liquid

UN3430 Xylenols, liquids

UN3431 Nitrobenzotrifluorides, solid

UN3432 Polychlorinated biphenyls, solid

UN3433 Lithium alkyls, solid

UN3434 Nitrocresols, liquid

UN3435 Hydroquinone solution

UN3436 Hexafluoroacetone hydrate, solid

UN3437	Chlorocresols, solid
UN3438	alpha-Methylbenzyl alcohol, solid
UN3439	Nitriles, toxic, solid, n.o.s.
UN3440	Selenium compound, liquid, n.o.s.
UN3441	Chlorodinitrobenzenes, solid
UN3442	Dichloroanilines, solid
UN3443	Dinitrobenzenes, solid
UN3444	Nicotine hydrochloride, solid
UN3445	Nicotine sulphate, solid
UN3446	Nitrotoluenes, solid
UN3447	Nitroxyls, solid
UN3448	Tear gas substance, solid, n.o.s.
UN3449	Bromobenzyl cyanides, solid
UN3450	Diphenylchloroarsine, solid
UN3451	Toluidines, solid
UN3452	Xylidines, solid
UN3453	Phosphoric acid, solid
UN3454	Dinitrotoluenes, solid
UN3455	Cresols, solid
UN3456	Nitrosyl-sulphuric acid, solid
UN3457	Chloronitrotoluenes, solid
UN3458	Nitroanisoles, solid
UN3459	Nitrobromobenzenes, solid
UN3460	N-Ethylbenzyltoluidines, solid
UN3461	Aluminium alkyl halides, solid
UN3462	Toxins, extracted from living sources, solid, n.o.s.
UN3464	Organophosphorus compound, toxic, solid, n.o.s.
UN3465	Organoarsenic compound, solid, n.o.s.
UN3466	Metal carbonyls, solid, n.o.s.
UN3467	Organometallic compound, toxic, solid, n.o.s.
UN3468	Hydrogen in a metal hydride storage system

A commenter stated that by adding the shipping names for desensitized explosives under identification numbers UN3379 and UN3380, approvals should be modified to authorize the use of classifications for the applicable hazardous materials. The commenter also noted that due to these additions, the definitions for flammable solids and flammable liquids require revision to account for the new shipping names. We do not anticipate a significant number of explosives being assigned to these shipping names. Therefore, we disagree with the commenter's contention that each holder of an EX number request an updated shipping classification. In addition, we do not agree with the commenter's request to revise the definitions of flammable solid and flammable liquid to include the additional proper shipping names. The definitions of flammable solid and flammable liquid adequately describe materials assigned to those shipping names. Additionally, shipping names are not found under hazard class definitions, but rather, in the HMT.

• We added the following new generic entries for materials that are toxic by inhalation. These new names will replace the existing generic entries in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries are as follows:

- UN3381 Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.*
- UN3382 Toxic by inhalation liquid, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.*
- UN3383 Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.*
- UN3384 Toxic by inhalation liquid, flammable, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.*
- UN3385 Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.*
- UN3386 Toxic by inhalation liquid, water-reactive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.*
- UN3387 Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.*
- UN3388 Toxic by inhalation liquid, oxidizing, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.*
- UN3389 Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.*
- UN3390 Toxic by inhalation liquid, corrosive, n.o.s. *with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.*

• We added the following new generic entries for organometallic substances. This action is consistent

with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. The new entries are as follows:

- UN3391 Organometallic substance, solid, pyrophoric
- UN3392 Organometallic substance, liquid, pyrophoric
- UN3393 Organometallic substance, solid, pyrophoric, water-reactive
- UN3394 Organometallic substance, liquid, pyrophoric, water-reactive
- UN3395 Organometallic substance, solid, water-reactive
- UN3396 Organometallic substance, solid, water-reactive, flammable
- UN3397 Organometallic substance, solid, water-reactive, self-heating
- UN3398 Organometallic substance, liquid, water-reactive
- UN3399 Organometallic substance, liquid, water-reactive, flammable
- UN3400 Organometallic substance, solid, self-heating

In addition, we are continuing to allow the use of the following specific Organometallic entries: UN1366, UN1370, UN2005, UN2445, UN3051, UN3052, UN3053, and UN3076. However, we anticipate removing these entries from the HMT by January 1, 2007.

• The U.N. Recommendations have adopted a rationalized approach for the assignment of UN portable tank instructions for solid materials. Based on that rationalized approach, we made several changes to UN portable tank authorizations in the HMR. These changes are summarized as follows. For a more specific identification of the affected shipping descriptions, refer to the *UN report* located in the public Docket.

For Division 4.1, Packing Group I materials, the use of UN portable tanks is not authorized.

For Division 4.3 materials with a subsidiary class of 6.1, in Packing Group I, the use of portable tanks is not authorized.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group II, Special Provisions T3 is specified.

For Division 4.2, Packing Group I materials, T21 and TP7 is specified.

For Division 4.3, Packing Group I materials, T9 and TP7 is specified.

For Division 5.1, Packing Group I materials, the use of UN portable tanks is not authorized.

For Division 6.1 and Class 8, Packing Group I materials, T6 is specified.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group III, Special Provisions T1 is specified.

• Several entries in the HMT have been revised by amending column 9B to read “forbidden” so that the materials are no longer authorized for transport aboard cargo aircraft. The entries have been revised because they meet the criteria of either Zone C or Zone D inhalation toxicity. All other Zone C and Zone D toxic by inhalation materials listed in the HMR are currently already forbidden from transport aboard passenger and cargo aircraft (these materials are already forbidden from transport aboard passenger aircraft). The entries to be revised include:

Zone C

UN2204 Carbonyl sulfide
UN1023 Coal gas, compressed
UN1064 Methyl mercaptan
UN1048 Hydrogen bromide, anhydrous
UN1079 Sulfur dioxide

Zone D

UN1005 Ammonia, anhydrous
UN3318 Ammonia solution, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia*
UN1040 Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C
UN1040 Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C
UN2191 Sulfuryl fluoride

Also, see § 172.102 for additional HMT amendments.

Appendix B to § 172.101

In Appendix B to § 172.101, List of Marine Pollutants, we removed the entries “Diphenyl oxide and biphenyl phenyl ether mixtures,” “Isoamyl mercaptan,” “Pentanethiols,” and “Tetrachlorophenol.” We revised the entry “2, 6-Di-tert-Butylphenol” and we added the entry “Chloropicrin.”

Section 172.102

We amended § 172.102, Special Provisions, as follows:

• Several entries in the HMT are revised by adding special provisions A3, A6, A7, A9, A10, N3, and N36 to align this section with the equivalent special provisions in the ICAO Technical Instructions (13, 2, 5, 4, 7, 21, and 3 respectively). We removed the “A” special provisions for several entries because we have determined that the materials to which the provisions apply are currently not authorized for transportation on either passenger or cargo aircraft.

The following entries are revised by adding special provision A3:

UN1154 Diethylamine
UN1788 Hydrobromic acid, *not more than 49% strength*
UN1789 Hydrochloric acid
UN2031 Nitric acid, *other than red fuming, with more than 70% nitric acid*
UN2604 Boron trifluoride diethyl etherate

• The following entries are revised by adding A6:

UN1111 Amyl mercaptan
UN1228 Mercaptans, liquid, flammable, toxic, n.o.s.
UN1760 Corrosive liquid, n.o.s.
UN1903 Disinfectants, liquid, corrosive, n.o.s.
UN2031 Nitric acid, *other than red fuming, with not more than 70% nitric acid*
UN2054 Morpholine
UN2347 Butyl mercaptan
UN2363 Ethyl mercaptan
UN2402 Propanethiols
UN2801 Dye, liquid, corrosive, n.o.s.
UN2920 Corrosive liquid, flammable, n.o.s.
UN2922 Corrosive liquid, toxic, n.o.s.
UN3071 Mercaptans, liquid, toxic, flammable, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3098 Oxidizing liquid, corrosive, n.o.s.
UN3099 Oxidizing liquid, toxic, n.o.s.
UN3139 Oxidizing liquid, n.o.s.
UN3145 Alkylphenols, liquid, n.o.s. (*including C2-C12 homologues*)
UN3264 Corrosive liquid, acidic, inorganic, n.o.s.
UN3265 Corrosive liquid, acidic, organic, n.o.s.
UN3266 Corrosive liquid, basic, inorganic, n.o.s.
UN3267 Corrosive liquid, basic, organic, n.o.s.
UN3301 Corrosive liquid, self-heating, n.o.s.

• The following entries are revised by adding special provision A7:

UN1167 Divinyl ether, stabilized
UN1277 Propylamine
UN1389 Alkali metal amalgam, liquid
UN1389 Alkali metal amalgam, solid
UN1391 Alkali metal dispersion or Alkaline earth metal dispersion
UN1407 Cesium or Caesium
UN1420 Potassium metal alloys
UN1421 Alkali metal alloy, liquid, n.o.s.

UN1422 Potassium sodium alloys
UN1431 Sodium methylate
UN1796 Nitrating acid mixture *with not more than 50% nitric acid*
UN1796 Nitrating acid mixture *with more than 50% nitric acid*
UN1826 Nitrating acid mixture, spent *with not more than 50% nitric acid*
UN1826 Nitrating acid mixture, spent *with more than 50% nitric acid*
UN1828 Sulphur chlorides
UN1938 Bromoacetic acid
UN2257 Potassium
UN2749 Tetramethylsilane
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3093 Corrosive liquid, oxidizing, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3094 Corrosive liquid, water-reactive, n.o.s.
UN3205 Alkaline earth metal alcoholates, n.o.s.
UN3205 Alkaline earth metal alcoholates, n.o.s.
UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3208 Metallic substance, water-reactive, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
UN3209 Metallic substance, water-reactive, self-heating, n.o.s.

• The following entries are revised by adding special provision A9:

UN1449 Barium peroxide
UN1452 Calcium chlorate
UN3212 Hypochlorites, inorganic, n.o.s.

• The following entries are revised by adding special provision A10:

UN1828 Sulphur chlorides
UN2401 Piperidine

• The following entry is revised by adding special provision N3:

UN2817 Ammonium hydrogendifluoride solution

• The following entries are revised by adding special provision N36:

UN1184 Ethylene dichloride
UN1732 Antimony pentafluoride
UN1777 Fluorosulphonic acid
UN2699 Trifluoroacetic acid

• The following entries are revised by removing certain “A” special provisions since the materials themselves are forbidden for transportation aboard passenger and cargo aircraft:

UN1541 Acetone cyanohydrin, stabilized (remove A3)
 UN1722 Allyl chloroformate (remove A3)
 UN2692 Boron tribromide (remove A3, A7)
 UN1744 Bromine or Bromine solutions (remove A3, A6)
 UN2484 tert-Butyl isocyanate (remove A7)
 UN2485 n-Butyl isocyanate (remove A7)
 UN1752 Chloroacetyl chloride (remove A3, A6, A7)
 UN1754 Chlorosulfonic acid (*with or without sulfur trioxide*) (remove A3, A6, A10)
 UN2382 Dimethylhydrazine, symmetrical (remove A7)
 UN1182 Ethyl chloroformate (remove A3, A6, A7)
 UN2481 Ethyl isocyanate (remove A7)
 UN2014 Hydrogen peroxide, aqueous solutions *with more than 40 percent but not more than 60 percent hydrogen peroxide* (stabilized as necessary) (remove A3, A6)
 UN2015 Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions, stabilized *with more than 60 percent hydrogen peroxide* (remove A3, A6)
 NA9206 Methyl phosphonic dichloride (remove A3)
 UN2534 Methylchlorosilane (remove A2, A3, A7)
 UN2304 Naphthalene, molten (remove A1)
 UN1670 Perchloromethyl mercaptan (remove A3, A7)
 UN1810 Phosphorus oxychloride (remove A7)
 UN2740 n-Propyl chloroformate (remove A3, A6, A7)
 UN1829 Sulfur trioxide, stabilized (remove A7)
 UN1831 Sulfuric acid, fuming *with 30 percent or more free sulfur trioxide* (remove A3, A6, A7)
 UN1834 Sulfuryl chloride (remove A3)
 UN1836 Thionyl chloride (remove A7)
 UN2474 Thiophosgene (remove A7)
 UN1838 Titanium tetrachloride (remove A3, A6)
 UN2441 Titanium trichloride, pyrophoric or Titanium trichloride mixtures, pyrophoric (remove A7, A8, A19, A20)
 UN2442 Trichloroacetyl chloride (remove A3, A7)
 UN1295 Trichlorosilane (remove A7)
 UN2438 Trimethylacetyl chloride (remove A3, A6, A7)

• Paragraph (b)(3) of this section is amended to specify that a “B” code refers to a special provision that applies only to certain bulk packaging requirements and that, unless otherwise

stated, does not apply to UN, IM Specification portable tanks or IBCs.

• Paragraph (b)(4) of this section is amended to specify that a code containing the letters “IB” or “IP” refers to a special provision that applies only to transportation in IBCs.

• Paragraph (b)(7) of this section is amended to specify that a code containing the letter “T” refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

• Paragraph (b)(8) is redesignated (b)(9) and a new paragraph (b)(8) is added to specify that a code containing the letters “TP” refers to a special provision that is in addition to those provided by the portable tank instructions or the requirements in part 178.

• Special Provision 47 is revised to include an additional exception currently in the UN Model Regulations specifying that a leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags.

• Special Provision 135 is revised to expand the applicability of the proper shipping names “Vehicle, flammable liquid powered” and “Vehicle, flammable gas powered” to include hybrid electric vehicles.

• Special Provision 137 is revised to expand the exception for “Cotton, dry”.

• Special Provision 143 is removed and relocated to § 173.219 so that the limitations on the types of hazardous materials authorized apply to both self-inflating and non-self-inflating life-saving appliances.

• Special Provision 153 is relocated to new paragraph (k) in § 173.115 and revised to include amended classification criteria for aerosols containing flammable constituents consistent with criteria in the UN Model Regulations. The revised criteria include methods for the classification of aerosols based on the percentage of flammable components. One commenter agreed with the removal of Special Provision 153 and the relocation of classification criteria for aerosols to § 173.115(k).

• New Special Provision 163 is added to specify that Ammonium Nitrate Emulsions are required to satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18.

• New Special Provision 164 is added to specify that an approval is required for “Desensitized explosives, liquid, n.o.s.” and “Desensitized explosives, solid, n.o.s.”

• New Special Provision 165 is added to the calcium hypochlorite PG II and the PG III entries for UN1748 and

UN2880 to specify the danger of exothermic decomposition and require shading from direct sunlight and sources of heat during transportation. One commenter agreed with our efforts to harmonize the HMR with UN Recommendations, but was concerned with the intent of Special Provision 165. This commenter agreed that calcium hypochlorite should be shaded from direct sunlight but questioned the ambient heat and ventilation provisions. The commenter stated that calcium hypochlorite is currently transported in closed cargo transport units, thus, satisfying the requirement to protect this hazardous material from direct sunlight. However, since the cargo transport units are not ventilated by fan or induced ventilation, and the cargo transport units would be subjected to ambient heat, a violation of Special Provision 165 appears imminent. We disagree. We feel Special Provision 165 provides latitude for compliance with the ventilation and ambient heat requirements. Proper ventilation and protection from ambient heat can be achieved during the loading process of the cargo transport units and throughout the transportation cycle by allowing adequate space for air movement around the calcium hypochlorite packages. We do agree; however, that cargo transport units themselves should not be required to be shaded from direct sunlight. Therefore, we have revised the regulatory text accordingly.

• New Special Provision 166 is added to the PG II entry for calcium hypochlorite, UN2880 and UN1748 to indicate that calcium hypochlorite in the non-friable tablet form may be transported as a PG III material.

• New Special Provision 167 is added to the new entry for “Hydrogen in a metal hydride storage system” to specify that such storage systems shall always be considered as containing hydrogen.

• New Special Provision 170 is added to Organometallic substances entries (UN3391, UN3392, UN3393, and UN3394). The special provision requires air to be eliminated from the vapor space by nitrogen or other means.

• New Special Provision 171 is added to the UN2880 PG III entry. Since UN2880 also covers mixtures of hydrated calcium hypochlorite in any concentration, some formulations in other than tablet form (e.g., in granular form) may meet the criteria for classification in Division 5.1, Packing Group III when subjected to the relevant test in the UN Manual of Tests and Criteria. The PG III entry for calcium hypochlorite is only authorized when the material is offered in the non-friable tablet form or for granular or powdered

mixtures. This entry is not authorized for the pure form of "Calcium hypochlorite, hydrated". We also recognize that some formulations, when tested, do not meet the criteria for classification in Division 5.1. In light of this, we added a new Special Provision 171 to the UN2880, PG III entry in the HMT to allow for the possibility to classify powdered or granular mixtures of hydrated calcium hypochlorite in Packing Group III when data indicate that the mixture meets the criteria for assignment to PG III. One commenter supports the revisions that align calcium hypochlorite entries in the HMT with UN Recommendations. However, this commenter requested the addition of Special Provision 171 to the entry, "Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry, (UN1748)" for consistent alignment with the UN Recommendations. We agree. After further review of the UN Recommendations, we have determined that the UN Special Provision 316 is equivalent to the proposed Special Provision 171 in Docket HM-215G, and is applicable to both the "dry" and "hydrated" calcium hypochlorite entries. Therefore, we are assigning Special Provision 171 to the "Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry, (UN1748)" entry.

- Special Provision A11 is currently assigned to UN 2983, Ethylene oxide and Propylene oxide mixtures and UN 1411, Lithium aluminum hydride, ethereal. In the ICAO Technical Instructions these substances are only authorized for transport in metal cylinders. A11 states "For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used. In the NPRM, we proposed to harmonize with the applicable ICAO Technical Instruction particular packing requirement (PPR 8), however discussions with the ICAO Dangerous Goods Panel and further analysis of ICAO PPR 8 has revealed that the requirement may need to be amended. Our analysis showed that other packagings, including glass inner packagings, are authorized, and as such restricting packagings to only specification cylinders appears unnecessarily restrictive. As such we are not proposing to amend Special Provision A11 in this final rule.

- Consistent with ICAO, we are adding a proper shipping name to the HMT for "Receptacles, small containing gas, 2.2 with a subsidiary of 5.1." A new "A" code (A14) is added to prohibit this

material from being transported as a limited quantity or consumer commodity in accordance with § 173.306 aboard an aircraft. This new "A" code has also been added to the following additional shipping names: "Oxygen, compressed," "Carbon dioxide and oxygen mixtures," "Nitrous oxide," "Compressed gas oxidizing," and "Liquefied gas, oxidizing."

- For consistency, the authorization in Special Provision B69 to allow dry sodium or potassium cyanide in siftproof, water-resistant fiberboard IBCs is relocated to new Special Provision IP20.

- Paragraph (c)(4) of this section is amended by relocating "Table 2.—Organic Peroxide IBC Code (IB52)" to paragraph (e) of § 173.225 and renaming it the "Organic Peroxide IBC Table." Table 3.—IP Codes is redesignated Table 2.—IP Codes. The wording of paragraph (c)(4) is revised to indicate that Table 3.—IP Codes had been redesignated Table 2.—IP Codes. All references to IB52 in the HMR are removed and replaced with "Organic Peroxide IBC Table" or "§ 173.225(e)," as applicable.

- Paragraph (c)(7) is amended by relocating the Portable Tank Code T50 Table to § 173.313 and renaming it "UN Portable Tank Table for Liquefied Compressed Gases." The T50 Table and its description is removed from paragraph (c)(7)(iv) and replaced with a statement indicating that the new "UN Portable Tank Table for Liquefied Compressed Gases" is found in § 173.313. All references to T50 in the HMR are removed and replaced with "UN Portable Tank Table for Liquefied Compressed Gases in § 173.313." In addition, paragraph (c)(7) is amended by relocating Portable Tank Code T23 to paragraph (g) of § 173.225 and renaming it the "Organic Peroxide Portable Tank Table." Portable Tank Code T23 and its description found in paragraph (c)(7)(iii) are removed and paragraphs (c)(7)(iv)–(c)(7)(vii) are redesignated (c)(7)(iii)–(c)(7)(vi), respectively. All references to T23 in the HMR are removed and replaced with "Organic Peroxide Portable Tank Table" or "§ 173.225(g)," as applicable.

- New paragraph (c)(8) is added to provide an introduction to the "TP" codes (*i.e.*, portable tank special provisions). The existing paragraph (c)(8) is redesignated paragraph (c)(9).

- New Special IBC Packing Provision IP13 is added to specify that transportation by vessel in IBCs is prohibited.

- New Special IBC Packing Provision IP14 is added to specify that air must be eliminated from the vapor space by nitrogen purging or other means.

- New Special IBC Packing Provision IP20 is added to specify that dry sodium cyanide and potassium cyanide are also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

- Portable tank Special Provision TP3 is revised to include the maximum degree of filling (in %) for solids transported above their melting points.

- Special Provision TP6 is revised by removing the word "event" and replacing it with the word "incident."

- Portable tank Special Provision TP9 is removed from column (7) of the HMT for all materials that reference a T code special provision. Special provision TP9 states that a material with TP9 in Column (7) may only be transported in a portable tank if approved by the Associate Administrator. A material that has been given a T code does not require approval and is not subject to Special Provision TP9.

- In the NPRM we proposed adoption of a new portable tank special provision, TP33, by adding the new provision to certain entries in the HMT. However, we neglected to include the text of the provision itself. We are correcting this omission in this final rule.

Section 172.202

We are editorially revising paragraph (a)(2)(iii) by removing the examples that illustrate the optional provision to enter primary and subsidiary hazard class or division names on shipping papers for domestic shipments. In the HM-215E response to appeals final rule (69 FR 34604) that was published on June 22, 2004, we reinstated the provision which was removed in a previous rulemaking (68 FR 44992). During the process of correcting a printing error in one of the examples, we determined that the regulatory text is complete and sufficient without the use of examples.

In the NPRM [69 FR 34741] we proposed to amend paragraph (a)(5)(i) to require the quantity shown on a shipping paper for an explosive article, such as Cartridges, small arms, to be the net mass of the entire article rather than the net mass of the explosive contained in the article. Commenters generally support the proposal, suggesting that it will provide for consistency across modes of transportation and for more accurate calculations. However, several of these commenters note that, for certain explosive articles that contain very small amounts of an explosive, showing the net mass of the article rather than of the explosive contained in the article could misrepresent the transportation risk associated with the article. Two commenters state that,

because shippers have historically calculated the net mass based on the actual explosive material contained in the article rather than the entire article, the clarification proposed in the NPRM could cause increased confusion for shippers.

Internationally, as well, there is some concern that, at least for large explosive articles, the quantity indicated on the shipping paper should be the net mass of the explosive substances contained in the article rather than the net mass of the article itself. As suggested by some commenters to the NPRM, a number of the members of UN Transport of Dangerous Goods Sub-Committee agree using the net mass of the entire article rather than the net mass of the explosive material contained in the article may not appropriately communicate the explosive hazard to emergency responders. Until this issue is resolved through a change to the UN Model Recommendations, we are, in this final rule, amending paragraph (a)(5)(i) to clarify that for explosive articles the quantity shown on a shipping paper may be expressed in terms of the net mass of the article or the net mass of the explosive substances contained in the article. It should be noted, however, that for purposes of determining the per-package quantity limitations shown in Column 9 of the HMT, § 172.101(j)(3) specifies that when articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device rather than to its hazardous components. This would include explosive articles listed by name in the HMT. For example, in the case of a listed explosive article weighing 15 kg and containing 500 grams of explosive substance, the weight shown on the shipping paper may be 500 grams or 15 kg, but the weight used for purposes of compliance with Column (9) of the HMT must be 15 kg as required by § 172.101(j)(3).

Particularly for large articles, the quantity indicated on the shipping paper should be the net mass of the explosive substances contained in the article. For small explosive articles, such as Cartridges, small arms, we believe that the net mass of the article can be used to satisfy the total quantity requirement in § 172.202(a)(5)(i). As a practical matter, it is easier, and in certain instances necessary, for an offeror to provide the net mass of the article and the net explosive mass. For example, as previously stated, the net mass of an article must be used to ensure compliance with the per package quantity limitations set forth in Column 9 of the § 172.101 Hazardous Materials Table for transport aboard aircraft or

passenger rail (see § 172.101(j)(3)). However, for operational purposes, such as for stowage and segregation of large quantities of explosives or determining the quantity of explosives that can be transported on a vessel [see § 176.142(b)], the net explosive mass of the explosive substances contained in articles is needed.

Section 172.203

Paragraph (f) is revised by including the passenger and cargo aircraft limitation certification statement that is found in § 172.204. This aligns the HMR with the ICAO TI (see 4.1.5.8.1(b) of the ICAO TI). A new paragraph (i)(3) is added to specify additional shipping paper description requirements for a hazardous material consigned under an “n.o.s.” entry when offered for transportation by vessel. In addition, paragraph (m)(2) is revised to specify that the phrase “Poison Inhalation Hazard” or “Toxic Inhalation Hazard” is not required to be repeated if it otherwise appears in the shipping description. Finally, in paragraph (o)(3), the reference to § 173.225(c)(2) is amended to read § 173.225(b)(2).

One commenter felt the requirement to add a segregation code on the shipping paper for “n.o.s.” entries is unnecessary and unduly burdensome. In addition, the commenter is concerned that there may not be sufficient space on the shipping paper to indicate this notation. If, however, this requirement is adopted, the commenter requested an example of the required entry on shipping papers. We disagree. We do not feel this additional requirement is unnecessary or overly burdensome. The additional shipping paper description requirements apply only to hazardous material consigned under an “n.o.s.” entry when offered for transportation by vessel. We believe that consignors should be familiar with the hazards and segregation risks of their shipments, specifically “n.o.s.” materials that are not assigned segregation groups. By indicating the need to segregate such materials on the shipping paper, the consignor increases the likelihood that appropriate stowage procedures are followed, ensuring the safety of the vessel and its cargo. We also do not agree that there is inadequate space available on shipping papers to include the segregation group. However, we do agree that an example of the required entry should be presented for clarity and uniformity. Therefore, as recommended by the commenter, we are adding the example “IMDG Code segregation group—1 Acids” to § 172.203.

Section 172.204 and Section 172.321—Air Eligibility Marking

Under HM-215E (68 FR 44992), the air eligibility marking was adopted into the HMR as new § 172.321. Since publication of that final rule, the ICAO's Dangerous Goods Panel removed the air eligibility marking requirement from the ICAO Technical Instructions. In lieu of this marking, ICAO adopted a requirement that the shipping paper certification statement include the statement “I declare that all of the applicable air transport requirements have been met” when a hazardous material is offered for air transportation. Additionally, the revised section provided examples of the applicable air transport requirements that must be met. Based on this action, we revised the air eligibility marking requirement by making it optional rather than mandatory and adding the additional shipping paper certification statement for shipments going by aircraft. Therefore, we revised § 172.204(c)(3) by requiring that the statement “I declare that all of the applicable air transport requirements have been met” be included on the shipping paper in addition to the current certification statement when a hazardous material is offered for air transportation. Additionally, the revised section provides examples of the applicable air transport requirements that must be met and various section references. In order to allow shippers to expend stocks of preprinted shipping papers containing the previous certification statement, we are providing an additional ten month transitional provision for the new certification statement. Two commenters support RSPA's decision requiring shippers to sign the certification declaring compliance with requirements for air transportation. Additionally, several commenters agree with the revision to make the air eligibility marking optional. However, some commenters suggest making the marking “permissible” instead of “optional” to avoid potential confusion. We disagree. We are removing the requirement for shippers to mark packages acceptable for air transport with the air eligibility marking. This revision does not prohibit the use of the marking.

Section 172.315

Section 172.315 is amended to ensure that packages containing limited quantities which are transported by air are marked with the proper shipping name. Although the amendment was not proposed in this rulemaking, it was previously proposed and adopted under

HM-215E (68 FR 45000) but was omitted due to an editorial error during publication. The amendment provides harmonization with the ICAO Technical Instructions, which do not allow the UN number within a square-on-point border as a substitute for the proper shipping name. Note that this amendment does not preclude the ID number/square-on-point border from appearing on a package transported by air, it simply ensures that the proper shipping name is also required.

Section 172.317

A new § 172.317 is added to require a “KEEP AWAY FROM HEAT” handling mark on packages containing self-reactive substances of Division 4.1 or organic peroxides of Division 5.2 when such packages are transported by air.

Part 173

Section 173.3

The NPRM proposed to revise the requirements for use of salvage drums to include packages of hazardous materials that are found not to conform with the requirements of the HMR. In addition, the NPRM proposed to clarify that salvage drums may only be used for damaged, defective, non-conforming, or leaking packages identified as such after the packages have been placed in transportation. One commenter suggests that the phrase “after having been placed in transportation” as used in the NPRM is confusing and requests that we clarify the phrase using the terms “pre-transportation functions” and “transportation functions” as defined in a final rule published under Docket HM-223 October 30, 2003 (68 FR 61905). In response to this comment, in this final rule, we modified § 173.3(c) to clarify that salvage drums are to be used for damaged, defective, non-conforming, or leaking packages identified during transportation as “transportation” is defined in § 5102(12) of Federal hazardous materials transportation law—that is, the movement of property and loading, unloading, or storage incidental to the movement. When the HM-223 final rule becomes effective, the statutory definition for “transportation” will be added to § 171.8 of the HMR, as will definitions for “movement,” “loading incidental to movement,” “unloading incidental to movement,” and “storage incidental to movement.” Note that a package found to be leaking prior to its being placed in a salvage drum. Instead, it must be repackaged into an authorized

packaging in accordance with applicable HMR requirements.

Section 173.24

For consistency with the UN Recommendations, paragraphs (g)(4) and (g)(5) are revised to clarify the following:

(A) That IBCs (subject to the requirements in § 173.24(g)) are permitted to be vented to reduce internal pressure; and

(B) That venting of IBCs is not conditional upon whether a bulk special provision is indicated for a particular hazardous material in the § 172.101 hazardous materials table.

In addition, paragraph (i) is revised to clarify that other general requirements specific to air transportation apply and are found in § 173.27.

Section 173.25

Paragraph (a)(2) is revised by removing the requirement to mark an overpack with the air eligibility marking. In addition, in paragraph (a)(4), we are amending the HMR to require overpacks to be marked with the word “OVERPACK” or, alternatively, until October 1, 2007, with a statement indicating that inside packages comply with prescribed specifications. This is in response to adoption by the United Nations of the “OVERPACK” marking to indicate that packages within an overpack comply with prescribed specifications when specification markings on inside packagings within the overpack are not visible.

Section 173.27

Paragraph (i) is revised to indicate that the air eligibility mark has been removed. This section references a new requirement for shippers to place the following statement at the end of the certification statement when a hazardous material is authorized for air transportation: “I declare that all applicable air transport requirements have been met.”

Section 173.28

In paragraph (c)(2), we deleted the words “or a UN 1H1 plastic drum” in order to harmonize the HMR with the UN Model Regulations and remove a source of confusion within the regulated community regarding the reconditioning of a non-bulk packaging.

Section 173.115

In § 173.115, a new paragraph (k) is added (see discussion under § 172.102, Special Provision 153). One commenter noted that the proposed new § 173.115(k) would not allow aerosols to contain corrosive substances of Packing

Group II. The commenter further noted that UN Special Provision 63 allows aerosols to contain corrosive substances of Packing Group II and requested we harmonize with the UN Special Provision 63 in this regard. We agree with the commenter and further note that currently, the HMR authorizes a proper shipping name of “Aerosols, corrosive Packing Group II or III, each not exceeding 1 L capacity”. We are amending § 173.115(k) accordingly to clarify that aerosols may contain corrosive substances of Packing Group II.

Section 173.120 and Appendix H to Part 173

A commenter noted that under section § 173.120(a)(3), the reference to Appendix H for sustained combustibility tests directs the reader to Figures 5.1 and 5.2 found in the UN Recommendations. These figures are no longer in the UN Recommendations, but, rather, are located in section 32.5.2 of the Fourth Revised Edition of the UN Manual of Tests and Criteria. We agree with the commenter. Therefore, we are amending Appendix H to Part 173 to reference the UN Manual of Tests and Criteria.

Section 173.128

In paragraph (d)(1)(i), the section reference is revised to read § 173.225(c). In addition, in paragraphs (d)(1)(ii) and (d)(1)(iii), the section reference is revised to read § 173.225(b).

Section 173.132

In paragraph (b)(1), we revised the definition of LD⁵⁰ for acute oral toxicity to indicate that adult albino rats may be tested without regard to gender. The current definition for LD⁵⁰ for acute oral toxicity in § 173.132(b)(1) is based on the Organization for Economic Co-Operation and Development (OECD) Test Guideline (TG) 401. The OECD has agreed to three test methods that will replace the current TG 401. The United Kingdom, Germany and the United States of America took the lead in the development of the three alternative tests that OECD has now adopted and published in the OECD Guidelines for the Testing of Chemicals. In a continuing attempt to improve the estimate of acute oral toxicity while reducing the number of animals used per test, three alternative TGs have been developed and implemented to replace TG 401. The three TGs are the Fixed Dose Procedure (FDP, TG 420), the Acute Toxic Class Method (ATCM, TG 423), and the Up-and-Down Procedure (UDP, TG 425). The text is consistent

with the text in the 13th revised edition of the UN Model Regulations.

Section 173.136

We added a new paragraph (d) to provide a grandfather clause that will allow for the continued shipment of materials classified as corrosive to steel or aluminum under ASTM G 31-72 without retesting.

Section 173.137

In paragraph (c)(2), we propose to eliminate the references to ASTM G 31-72 as an acceptable test description and add a statement indicating an acceptable test is prescribed in the Manual of Tests and Criteria, Part III, Section 37.

Sections 173.150, 173.151, 173.152, 173.153 and 173.154

We are allowing most Division 6.1, Packing Group II materials to be transported under the limited quantity provisions when the packagings contain not more than 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids. However, consistent with the limited quantity authorization for Division 6.1, Packing Group III, we are not providing a labeling exception for these materials. We are also not allowing these materials to be shipped as consumer commodities. In addition, we revised the limited quantity sections for the other hazard classes of materials to take into account materials with a subsidiary hazard of 6.1 Packing Group II. One commenter agreed with the amendment allowing numerous Class 3, PG II materials with Class 8 and other subsidiary hazards to be transported as limited quantities.

Section 173.185

In § 173.185, we amended paragraphs (c)(3) and (e)(6), to require those lithium cell and battery design types that are required to be subjected to the UN performance tests to be of a type that is proven to meet the requirements of the performance tests specified in the UN Manual of Tests and Criteria, Fourth Revised Edition. These cells and batteries are currently required to be of a type that is proven to meet the tests in the third revised edition. We also proposed a grandfather provision that would authorize a lithium cell or battery that was transported prior to the effective date of this rule that is of a type proven to meet the UN performance tests in the third revised edition to not be required to be retested in accordance with the tests in the fourth revised edition. One commenter supported this approach and stated that it is both necessary and appropriate to allow continued transport of cells and

batteries tested and qualified under the UN lithium battery design qualification tests in accordance with the UN Manual of Tests and Criteria, Third Revised Edition. The commenter further stated that providing a grandfather provision for previously tested cells and batteries would avoid the need and expense of requalifying these cells and batteries in accordance with the new tests prescribed in the Fourth Revised Edition of the UN Manual of Tests and Criteria. After further consideration, we believe that authorizing an indefinite period for the transport of batteries that were tested in accordance with the UN Manual of Tests and Criteria, Third Revised Edition, 1999 may not be in the best interest of safety. The tests in the UN Manual of Tests and Criteria, Fourth Revised Edition provide a slightly higher level of safety and we believe that further consideration needs to be taken in considering whether at some point in time all applicable lithium batteries and cell design types should be proven to meet the requirements of the UN Manual of Tests and Criteria, Fourth Revised Edition. As a result, we will issue a proposal shortly specifically to address the full unrestricted adoption of the Fourth Revised Edition of the UN Manual of Tests and Criteria.

Section 173.186

In § 173.186, in paragraph (e), we amended the gross weight for UN 4G outer packages authorized for the transportation of strike-anywhere matches, to be consistent with the UN Model Regulations by increasing the weight from 27 kg (60 pounds) to 30 kg (66 pounds).

Section 173.187

We revised § 173.187 to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This change eliminates the need for DOT Exemption "DOT-E 11548."

Sections 173.211, 173.212, and 173.213

We revised these sections to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This change removed the need for DOT Exemption "DOT-E 11548."

Section 173.219

We revised § 173.219 for consistency with the UN Model Regulations and the ICAO Technical Instructions. Included in the revision is an allowance for self-inflating life-saving appliances to contain cartridges, power devices of

Division 1.4S, for purposes of the self-inflating mechanism. In addition, we provided an exception from regulation for life-saving appliances containing only carbon dioxide cylinders not exceeding 100 cm³ capacity, provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg. Finally, the limitations currently found in Special Provision 143 are relocated to § 173.219 (see preamble discussion under Special Provision 143).

Section 173.220

Paragraph (b)(2) is amended to harmonize the requirements for transporting flammable gas powered vehicles by air with the requirements of Packing Instruction 900 of the ICAO Technical Instructions.

Section 173.224

Paragraph (b)(4) of this section is amended to include the new references for § 173.225. The section reference to § 173.225(e) for the authorization of bulk packagings is replaced with § 173.225(f) for IBCs and § 173.225(h) for other bulk packagings.

Section 173.225

This section is amended to update the Organic Peroxide Table and eliminate special provisions IB52 and T23 from § 172.102(c). The purpose of the change is to consolidate the packaging requirements for organic peroxides into one section and to have separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs. The changes are as follows:

Paragraph (a) is revised by adding paragraphs (b) and (b)(6), which state that bulk packagings may require a lower control temperature than those specified for non-bulk packagings and that an organic peroxide not identified in either the Organic Peroxide Table, Organic Peroxide IBC Table, or Organic Peroxide Portable Tank Table must be approved under § 173.128(c).

Paragraph (b) is revised to eliminate all IBC and other bulk packaging authorizations from column 6 of the Organic Peroxide Table. Various obsolete entries were also removed. The current paragraph (b), "Organic Peroxide Table," is moved to paragraph (c) and the current paragraph (c), "New organic peroxides, formulations and samples," is moved to paragraph (b).

The notes following the Organic Peroxide Table are changed as follows:

- Revise note 22 to indicate that ethylbenzene with greater than or equal to 25% of dilutant type A is acceptable.

- Revise note 23 to indicate that methyl isobutyl ketone with greater than or equal to 19% of dilutant type A is acceptable.

- Add a new note 29 to identify materials which are not included in the UN Model Regulations and note that a Competent Authority approval is required for international transportation.

- Remove Notes 9, 11, and 14 following the Organic Peroxide Table.

In addition, The Packing Method Table found in paragraph (d), is revised by replacing the 200 kg maximum quantity for solids and combination packagings listed in OP8 with a 400 kg maximum quantity. Note 2, following the table, is revised to allow 200 kg of solid material per box and up to 400 kg of material per authorized combination packaging. The note also indicates that the outer packaging must be a box (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and each inner packaging must be of plastics or fiber with a maximum net mass of 25 kg. Paragraph (d)(3) is clarified by revising the text to state that the maximum content acceptable for glass receptacles used as inner packagings of a combination packaging is 0.5 kg for solids or 0.5 L for liquids.

A new paragraph (e) is added to include the new "Organic Peroxide IBC Table" that replaces the current "Table 2.—Organic Peroxide IBC Code (IB52)" in § 172.102(c)(4). The new table is revised to add an organic peroxide, "Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water." In addition, the new Organic Peroxide IBC Table identifies, by technical name, those organic peroxides authorized for transportation in the IBCs that are specifically listed in the table.

A new paragraph (f) is added to include the current IBC requirements contained in paragraph (e)(5) of this section. Paragraph (f) also includes requirements that are specific to organic peroxides packaged in IBCs.

A new paragraph (g) is added to include the new "Organic Peroxide Portable Tank Table," that replaces the current "Portable Tank Code T23" found in § 172.102(c)(7)(iii). The new table is identical to the current table except that for UN 3109, in the entry for Pinanyl hydroperoxide, 50% is replaced by 56% and all references to self-reactive materials are removed. In addition, the Organic Peroxide Portable Tank Table provides certain portable tank requirements and identifies, by technical name, those organic peroxides authorized for transportation in the bulk packagings listed in the new paragraph (h).

The current paragraph (e) is redesignated as paragraph (h). Paragraph (h) establishes requirements that are specific to organic peroxides packaged in certain bulk packagings.

Additionally, the new "Note to Paragraph (h)(3)(vi)" is revised to include changes brought forth by petition for rulemaking P-1428. The petition proposed to amend the current paragraph (e)(3)(vi) and allow for a second but equally acceptable example of an emergency-relief device sizing method to be added to the HMR. We agreed with the petitioner and added a statement to the new paragraph (h)(3)(vi) indicating that an additional example of an emergency-relief device sizing method can be found in the "American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2)" as referenced in § 171.7(b).

The changes to this section altered the order of the paragraphs within this section; therefore, various citations were changed. Also, paragraphs referencing IB52 or TP23 are revised to indicate that those provisions no longer exist and the updated requirements are found in paragraph (e) and (g), respectively. A commenter requested that § 173.225 be revised to allow for increased industry flexibility, regulatory uniformity, and to better align with the UN Recommendations. We agree and have made the following revisions:

- Added wording to 173.225(a) to show that organic peroxides that are not identified in the organic peroxide table, but are in paragraph (b)(3) are not subject to the requirements of § 173.128.

- Removed Note 1 from both entries of tert-Butyl cumyl peroxide and Note 11 from Dicumyl peroxide.

- Removed the sentence "The additional requirements in paragraph (h)(5)(i) and (h)(5)(ii) of this section also apply" from § 173.225(f) and renumbered (f)(i) and (f)(ii) as (f)(1) and (f)(2), respectively.

- Revised the introductory text to Paragraph (h) to indicate that the bulk packagings that follow are for materials authorized for transport in a bulk packaging by Paragraph (h) and organic peroxides listed in the Organic Peroxide Portable Tank Table.

- Removed two occurrences of the term "Type F" from Paragraph (h)(3) to broaden the applicability of the provisions.

- Removed statement from § 173.225(h)(3)(xii) indicating that DOT Specification 57 portable tanks are not subject to the requirements of paragraphs (h)(3)(ii) and (h)(3)(iv) of this section.

Sections 173.226 and 173.227

We revised the packaging requirements of §§ 173.226 and 173.227 for materials poisonous by inhalation, Division 6.1, Packing Group I, Hazardous Zone A and Hazard Zone B. These amendments have: Reduced the hydrostatic test pressure of the inner drum in a drum-within-a-drum configuration authorized in § 173.226(b); standardized the minimum thickness requirements of the inner drums in the drum-within-a-drum configuration authorized in §§ 173.226(b) and 173.227(b); clarified the test requirements for inner packaging systems in § 173.226(b)(2)(iv); and in § 173.226(d) added a provision to authorize transportation of PIH materials in single packages when subjected to additional operational controls and approved by the Associate Administrator. Section 173.226(c)(2) is reformatted for ease of understanding. We removed an expired transitional date from paragraph (a) that allows the transport of welded cylinders filled before October 1, 2003 for the purpose of reprocessing or disposal of cylinders's content until December 31, 2003. One commenter recommended that we include a provision in § 173.227(b) to allow for the testing of the outer drum of a drum-in-drum package as either as a package intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids. We agree and have revised § 173.227(b) accordingly. Another commenter suggested that we increase the minimum thickness of a UN 1A1 drum in PIH service from .69 mm to 1.0 mm. Increasing the minimum thickness of a UN 1A1 drum in PIH service was not proposed in this rulemaking and inclusion of such a requirement is beyond the scope of this rulemaking. However, we are reviewing this request for consideration in a future rulemaking.

Section 173.249

Paragraph (c) is revised to be consistent with the current "Bromine" entry in the § 172.101 "Hazardous Material Table" that authorizes the use of a UN portable tank conforming to tank code T22. A commenter suggested that we include a provision authorizing the returning of a tank containing bromine residue. We agree that such a provision is necessary and have amended § 173.249 accordingly.

Sections 173.306 and 173.307

To add clarity to the HMR, the text currently found in § 173.306(i) is removed and replaced with the text

currently found in § 173.307(a)(5). Since § 173.306 is devoted exclusively to limited quantities of compressed gases, relocating § 173.307(a)(5) to § 173.306 makes the exception easier to find.

Section 173.313

A new § 173.313 is added to serve as the new location for the Portable Tank Code T50 Table. The table is renamed "UN Portable Tank Table for Liquefied Compressed Gases." The table provides the maximum allowable working pressures, bottom opening requirements, pressure relief requirements and degree of filling requirements for liquefied compressed gases permitted for transport in portable tanks. The change relocates these packaging requirements to Part 173, which is a more appropriate location, and makes the special provisions less cumbersome. In addition, the new UN Portable Tank Table for Liquefied Compressed Gases is amended by revising the Column 3 heading to read "Minimum design pressure (bar) * * *". The values in column 3 are actually minimum values, however the title of the column is misleading because it uses the term "Maximum allowable working pressure (bar) * * *".

Section 173.315

In paragraph (a), the reference to "portable tank provision T50 in § 172.102" is revised to read "the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313."

Section 173.323

After further considering the proposed changes to the packaging authorizations for ethylene oxide in § 173.323, we noted that the total quantity per package of ethylene oxide authorized for transport when glass inner receptacles are used was proposed to be increased from 100 grams to 2.5 kg. Due to the extremely flammable and explosive properties of ethylene oxide and the fragile properties of glass, after further consideration we have chosen not to adopt the 2.5 kg outer package limit found in the UN Recommendations and to retain our current outer package limit of 100 grams. The total quantity per package when metal inner receptacles are used will remain unchanged from the proposed 2.5 kg. In this rule, paragraphs (b)(1)–(b)(3) are revised and consolidated for consistency with current international requirements for the transportation of ethylene oxide in combination packagings. Paragraphs (b)(1)–(b)(3) provide the current authorizations for glass, aluminum, and metal receptacles respectively.

Amendments to this section include (1) removing the HMR limitation of 12 inner receptacles per outer package currently applied to aluminum and other metal receptacles, (2) removing the overpack restriction in (b)(2) which specifies a maximum of 10 boxes per overpack, (3) requiring a hot water bath test for all inner receptacles, (4) removing the pressure relief device and burst pressure requirements currently applied to metal receptacles, (5) applying the same outer package authorizations consistently to all inner packaging types and allowing any outer package authorized in § 172.201(b), and (6) requiring all inner packagings to be suitably cushioned (the top and bottom pad and perimeter liner requirement currently only applied to outer packages containing aluminum inner packagings is removed). Though we are eliminating the option to utilize certain packaging authorizations for glass and aluminum inner packagings, we believe that this change will have little or no economic impact on the ethylene oxide industry because of the amount of materials that are transported in international commerce. 3M Package Engineering requested that we reduce the maximum quantity of ethylene oxide permitted in any metal inner packaging from 340 g (12 ounces) to 200 g (7 ounces). They stated that such a change would more adequately align the HMR with international standards. We agree that such a change would align the HMR with international requirements. However, allowing a metal inner packaging to contain a maximum quantity of 340 g (12 ounces) does not limit compliance with international requirements. In addition, we cannot adopt the 200 g (7 ounces) limitation in this rulemaking because such a change would be more restrictive than the requirements we proposed. We may consider adopting the 200 g (7 ounces) limitation in a future rulemaking.

Part 175

Section 175.10

Consistent with an amendment to the ICAO TI, we are requiring that aerosol cans that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means. In addition, the ICAO Dangerous Goods Panel will convene a series of working groups to develop recommendations for consideration during the 20th session of the Dangerous Goods Panel to further review this issue. These recommendations may lead to additional amendments to the ICAO TI. Finally, we note that non-flammable

gases (e.g., nitrogen) other than carbon dioxide are used for the operation of mechanical limbs. Consistent with an amendment to the ICAO TI, we are proposing to provide an exception from the HMR for mechanical limbs that are powered by any Division 2.2 gas. One commenter recommended that the release device requirements added to § 175.10 also be incorporated into Part 173. Specifically, they requested that aerosol cans that are transported in commerce be protected by a cap or other suitable means to prevent inadvertent release. They indicated that this change should be coordinated with the Federal Aviation Administration (FAA). We disagree. Section 173.24(b)(1) states that each package used for the shipment of hazardous materials must be constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incident to transportation there will be no identifiable release of hazardous materials to the environment. We feel this section adequately addresses the commenter's concerns, and allows shippers the flexibility to properly protect aerosol cans.

Section 175.85

In § 175.85, a new paragraph (j) is added to specify the cargo location of a package bearing the "KEEP AWAY FROM HEAT" handling marking.

Part 176

Section 176.2

Certain definitions are revised. The definitions for "Explosive article" and "Explosive substance" are revised to remove an incorrect reference. The definition for "Magazine" is revised to include a compartment in the vessel. The definition for "Magazine" is also revised to specify vessel storage location and accessibility. The term "Transport unit" is revised to read "Cargo transport unit" to be consistent with Amendment 32 of the IMDG Code. In addition, in the definition "In containers or the like" the term "transport unit" is removed and the term "cargo transport unit" is added in its place.

Section 176.27

In this section, the words "transport unit" are replaced with the words "transport vehicle" in each place they appear to be consistent with the removal of the term "transport unit" from the definitions in § 176.2.

Section 176.63

Paragraph (e) is revised to align the definition of "Closed cargo transport unit" to be consistent with the

definition in Amendment 32 of the IMDG Code.

Section 176.76

Paragraph (i) is revised to clarify that for container ships, a distance equivalent to one container space athwartships (*i.e.*, in the direction of the breadth of the vessel) away from possible sources of ignition applied in any direction satisfies the requirement that a cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck be stowed “away from” possible ignition sources. This is consistent with Amendment 32 of the IMDG Code. In addition, in paragraphs (h) and (i), the words “transport unit” are removed and replaced with the words “cargo transport unit” in each place they appear to be consistent with Amendment 32 of the IMDG.

Section 176.83

Paragraph (l) is revised to correct an error pertaining to the Segregation Table that sets forth the general requirements for segregation of containers on board hatchless container vessels. In addition, throughout the section the words “transport units” are removed and replaced with the words “cargo transport units” in each place they appear to be consistent with Amendment 32 of the IMDG. A new paragraph (m) is added to specify the provisions for segregation groups.

Section 176.84

Paragraph (a) is revised to specify the various chemical groups listed in the segregation table. In the paragraph (b) Table of Provisions, we added eleven new provisions (codes) for certain stowage and segregation requirements for hazardous materials that are transported by vessel. In addition, in paragraph (c)(2) Provisions for the stowage of Class 1 (explosive) materials, we revised three notes. The terms “separated from” and “away from” in the codes are defined in § 176.83 of the HMR.

Code 133 is added to the entries “Barium chlorate solution,” UN3405; “Barium perchlorate solution,” UN3406; and “Chlorate and magnesium chloride mixture solution,” UN3407, that requires the material to be stowed “separated from” sulfur.

Code 134 is added to the entry “Aluminum alkyl halides, solid,” UN3461, that requires the material to be stowed “separated from” UN2716.

Code 135 is added to the entries “Methylamine, aqueous solution,” UN1235 and “Trimethylamine, aqueous solutions,” UN1297, that requires the

material to be stowed “separated from” mercury and mercury compounds.

Code 136 is added to the entry “Tributylphosphane,” UN3254, that requires the material to be stowed “separated from” carbon tetrachloride.

Code 137 is added to the entries “Arsenic compounds, liquid, n.o.s.,” UN1556 and “Arsenic compounds, solid, n.o.s.,” UN1557, that requires arsenic sulphides to be stowed “separated from” acids.

Code 138 is added to the entries for UN1448; UN1456; UN1479; UN1482; UN1490; UN1503; UN1515; UN3085; UN3087; UN3098; UN3099; UN3139; and UN3214, that requires the material to be stowed “separated from” peroxides.

Code 139 is added to the entry “1, 4-Butynediol,” UN2716, that requires the material to be stowed “separated from” mercury salts.

Code 140 is added to the entry “1, 4-Butynediol,” UN2716, that requires the material to be stowed “separated from” UN3052 and UN3461.

Code 141 is added to the entries for UN1732; UN1755; UN1806; UN1908; UN2433; UN2859; and UN2861, that requires the material to be stowed “away from” radioactive materials.

Code 142 is added to the entries for UN1748; UN2208; and UN2880, that requires packages in cargo transport units to be stowed so as to allow for adequate air circulation throughout the cargo.

Code 143 is added to the entry for Organometallic Substance, Liquid, Pyrophoric, UN3392, prohibiting transportation on any vessel carrying explosives (except explosives in Division 1.4, compatibility group S.

Note 19E is revised to specify that materials under entries NA0331; UN0004; UN0222; UN0241; and UN0402 must be stowed “away from” explosives containing chlorates or perchlorates.

Note 22E is revised to specify that materials under the entry “Explosive, blasting, type C,” must be stowed “away from” ammonium compounds and explosives containing ammonium compounds or salts.

Note 23E is revised to specify that materials under entries UN0247; UN0395; UN0396; UN0397; UN0398; UN0399; UN0400; UN0449; and UN0450 must be “separated from” Division 1.4 and “separated longitudinally by an intervening complete compartment or hold from” Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.

A commenter questioned how adequate air circulation was achieved in

a cargo transport unit. In addition, the commenter stated that it fails to understand why air circulation is necessary in a closed cargo transport unit, as indicated by Stowage Provision 142. Stowage Provision 142 indicates that packages in cargo transport units must be stowed so as to allow for adequate air circulation throughout the cargo. We feel cargo transport units that are properly loaded will allow for the adequate circulation of air by natural means so as to safeguard against excessive heat buildup within the cargo.

Section 176.116

In paragraph (c), the words “transport units” are revised to read “cargo transport units.” In addition, a new paragraph (f) is added to specify the under deck stowage requirements of Class 1 (explosive) materials allocated stowage categories 09 and 10.

Sections 176.122 and 176.124

Sections 176.122 and 176.124 are removed and reserved.

Section 176.128

In § 176.128, the section heading and section are revised.

Section 176.132

Section 176.132 is removed and reserved.

Section 176.133

Section 176.133 is revised to clarify the construction and stowage location requirements for magazine stowage type C.

Section 176.136

Section 176.136 is revised to clarify the special stowage requirements of Class 1 (explosive) materials. In addition, minor editorial revisions are made.

Section 176.138

Paragraph (a) is removed and reserved to be consistent with Amendment 32 of the IMDG Code. This paragraph currently requires Class 1 (explosive) material that is stowed on deck to be carried as close to the vessel’s centerline as practicable. (See also change to § 176.170.)

Section 176.142

Paragraph (a) is revised to remove “Pyrophoric organometallic compound, water-reactive, n.o.s.” from the list of liquid hazardous materials of extreme flammability that may not be transported in a vessel carrying Class 1 (explosive) materials. Additionally, we added to the above list the following new liquid entries:

- “Organometallic substance, liquid, pyrophoric, UN3392”
- “Organometallic substance, liquid, pyrophoric, water-reactive, UN3394”

These changes are consistent with Amendment 32 of the IMDG Code.

Section 176.144

In this section, the words “transport unit” are replaced with the words “cargo transport unit” in each place they appear to be consistent with the definition in Amendment 32 of the IMDG Code. Additional notes are added to Table 176.144(a)—“Authorized Mixed Stowage For Explosives” to address additional exceptions for mixed stowage of Class 1 materials.

Section 176.146

In § 176.146, in paragraph (d)(1), the wording “transport units” is revised to read “cargo transport units.”

Section 176.168

In § 176.168, in the title before the section heading, the wording “TRANSPORT UNITS AND SHIPBORNE BARGES” are revised to read “CARGO TRANSPORT UNITS AND SHIPBORNE BARGES.”

Section 176.170

A new paragraph (b) is added to prohibit freight containers loaded with Class 1 (explosive) materials, except for explosives in Division 1.4, from being stowed in the outermost row of containers. This change is consistent with Amendment 32 of the IMDG Code.

Section 176.174

Paragraphs (a) and (b) are revised to remove the references to portable magazines. This change is consistent with Amendment 32 of the IMDG Code.

Section 176.600

In § 176.600, in paragraph (a), the wording “closed transport units” is revised to read “closed cargo transport units.”

Part 178

Section 178.274

Paragraph (f)(v) is revised to more clearly specify the rated flow capacity marking required to be placed on every UN portable tank’s pressure relief device.

Section 178.275

Paragraph (i)(2) is revised to more clearly specify the combined delivery capacity of UN portable tank’s pressure relief systems.

Section 178.276

In paragraph (a)(4)(ii)(A), the reference to “portable tank special

provision T50” is revised to read “the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.” In addition, paragraph (d), the reference to “portable tank special provision T50 in § 172.102(c)(7)” is revised to read “UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.” Finally, in paragraph (e)(3), the reference to “portable tank special provision T50 in § 172.102” is revised to read “the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313.”

Section 178.602

Paragraph (b) is revised to clarify the requirements applicable to filling packaging other than bags in preparation for testing.

Section 178.603

Paragraph (c) is revised to add a definition indicating that a minimum specific gravity for solutions of water and anti-freeze is 0.95 for testing at 18 °C (0 °F) or lower. Additionally, in paragraph (e), we specify the drop test height for liquids in single packagings and for inner packagings of combination packagings, when the test is performed in water.

Section 178.810

Paragraph (b)(3) is revised to specify that water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at –18 °C (0 °F) or lower are acceptable test liquids for use when conducting IBC drop tests. This is consistent with our amendment to § 178.603(c)(1) regarding the testing of non-bulk packages. In addition, we added a sentence to clarify that when conditioning is required by § 178.810(b), the conditioning specified in § 178.802 (which requires a higher temperature) does not apply. We received a comment from the Reusable Industrial Packaging Association (RIPA) concerning this revision. RIPA believes that RSPA intended to clarify that water/antifreeze solutions with a minimum specific gravity of 0.95 are equivalent for testing purposes to IBCs containing only water, thereby eliminating the need to adjust the drop height of test units. RIPA stated that § 178.810(b)(3) should be revised to indicate that this solution may be considered equivalent to water for testing purposes. We agree and have revised the section accordingly.

Part 180

Section 180.350

Paragraph (c) is revised to expand the definition of routine maintenance of IBCs to include flexible, plastic and textile IBCs.

Section 180.352

Paragraph (d)(1)(iv) is revised to require persons other than the owner of metal, rigid plastics, and composite IBCs to mark the IBC indicating routine maintenance has been performed when such maintenance is performed. A new paragraph (d)(1)(v) is added to this section. This paragraph states that retests and inspections performed under paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the tests and inspections required by paragraph (b) of this section. This addition incorporates changes made to the 12th revised edition of the Transport of Dangerous Goods Model Regulations into the HMR. Three commenters requested that we revise § 180.352 to distinguish requirements applicable to repair and routine maintenance of IBCs. We agree and have revised § 180.352 creating a new paragraph entitled, “Requirements applicable to routine maintenance of IBCs.”

V. Regulatory Analyses and Notices

A. Statutory/Legal Authority for This Rulemaking

This final rule is published under the following statutory authorities:

1. 49 U.S.C. 5103(b) authorizes the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. This final rule amends regulations to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. To this end, as discussed in detail earlier in this preamble, the final rule amends the HMR to more fully align it with the biennial updates of the UN Recommendations, the IMDG Code and the ICAO Technical Instructions to facilitate the transport of hazardous materials in international commerce.

2. 49 U.S.C. 5120(b) authorizes the Secretary of Transportation to ensure that, to the extent practicable, regulations governing the transportation of hazardous materials in commerce are consistent with standards adopted by international authorities. This final rule amends the HMR to maintain alignment with international standards by incorporating various amendments to facilitate the transport of hazardous material in international commerce. To this end, as discussed in detail earlier in this preamble, the final rule incorporates changes into the HMR

based on the Thirteenth Revised Edition of the UN Recommendation, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. The continually increasing amount of hazardous materials transported in international commerce warrants the harmonization of domestic and international requirements to the greatest extent possible. Harmonization serves to facilitate international transportation; at the same time, harmonization ensures the safety of people, property, and the environment by reducing the potential for confusion and misunderstanding that could result if shippers and transporters were required to comply with two or more conflicting sets of regulatory requirements. While the intent of this rulemaking is to align the HMR with international standards, we review and consider each amendment on its own merit based on its overall impact on transportation safety and the economic implications associated with its adoption into the HMR. Our goal is to harmonize without sacrificing the current HMR level of safety and without imposing undue burdens on the regulated public. Thus, as discussed in detail earlier in this preamble, there are several instances where we elected not to adopt a specific provision of the UN Recommendations, the IMDG Code or the ICAO Technical Instructions; further, we are maintaining a number of current exceptions for domestic transportation that should minimize the compliance burden on the regulated community.

B. Executive Order 12866 and DOT Regulatory Policies and Procedures

This final rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by the Office of Management and Budget. This final rule is not considered a significant rule under the Regulatory Policies and Procedures of the Department of Transportation [44 FR 11034]. Benefits resulting from the adoption of the amendments in this final rule include enhanced transportation safety resulting from the consistency of domestic and international hazard communications and continued access to foreign markets by domestic shippers of hazardous materials. This final rule applies to offerors and carriers of hazardous materials, such as chemical manufacturers, chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, radiopharmaceutical companies, and training companies.

The majority of amendments in this final rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America. For example, cost savings will be realized by shippers and carriers as a result of the following:

- Eliminating the air eligibility marking requirement.
- Amendments allowing numerous Class 3, PG II materials with a Class 8 sub-risk and others to be transported as a limited quantity.
- Allowing cylinders to be used for many more substances than currently authorized.
- Allowing salvage packagings to be used for non-conforming packages; and generally minimizing differences between U.S. and international hazardous materials transportation regulations.

We are authorizing a delayed effective date and a one-year transition period to allow for training of employees and to ease any burden on entities affected by the amendments. The total net increase in costs to businesses in implementing this rulemaking is considered to be minimal and a regulatory evaluation is available for review in the Docket.

C. Executive Order 13132

This final rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 (“Federalism”). This final rule preempts State, local and Indian tribe requirements but does not propose any regulation that has substantial direct effects on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

The Federal hazardous material transportation law, 49 U.S.C. 5101–5127, contains an express preemption provision (49 U.S.C. 5125(b)) that preempts State, local, and Indian tribe requirements on certain covered subjects. Covered subjects are:

- (1) The designation, description, and classification of hazardous materials;
- (2) The packing, repacking, handling, labeling, marking, and placarding of hazardous materials;
- (3) The preparation, execution, and use of shipping documents related to hazardous materials and requirements related to the number, contents, and placement of those documents;
- (4) The written notification, recording, and reporting of the unintentional release in transportation of hazardous; and

(5) The design, manufacture, fabrication, marking, maintenance, recondition, repair, or testing of a packaging or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This final rule addresses covered subject items (1), (2), (3), and (5) above and preempts State, local, and Indian tribe requirements not meeting the “substantively the same” standard. This final rule is necessary to incorporate changes adopted in international standards, effective January 1, 2005. If the changes in this final rule are not adopted in the HMR, U.S. companies, including numerous small entities competing in foreign markets, are at an economic disadvantage. These companies are forced to comply with a dual system of regulations. The changes in this rulemaking are intended to avoid this result. Federal hazardous materials transportation law provides at section 5125(b)(2) that, if DOT issues a regulation concerning any of the covered subjects, DOT must determine and publish in the **Federal Register** the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. The effective date of Federal preemption is March 21, 2005.

D. Executive Order 13175

This final rule was analyzed in accordance with the principles and criteria contained in Executive Order 13175 (“Consultation and Coordination with Indian Tribal Governments”). Because this final rule does not have tribal implications, does not impose substantial direct compliance costs, and is required by statute, the funding and consultation requirements of Executive Order 13175 do not apply.

E. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires an agency to review regulations to assess their impact on small entities, unless the agency determines that a rule is not expected to have a significant impact on a substantial number of small entities. This final rule facilitates the transportation of hazardous materials in international commerce by providing consistency with international standards. This final rule applies to offerors and carriers of hazardous materials, some of whom are small entities, such as chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, and

training companies. As discussed above, under *Executive Order 12866*, the majority of amendments in this final rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America.

Many companies will realize economic benefits as a result of these amendments. Additionally, the changes brought forth by this final rule will relieve U.S. companies, including small entities competing in foreign markets, from the burden of complying with a dual system of regulations. Therefore, I certify that these amendments will not, if promulgated, have a significant economic impact on a substantial number of small entities.

This final rule has been developed in accordance with Executive Order 13272 ("Proper Consideration of Small Entities in Agency Rulemaking") and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act to ensure that potential impacts of draft rules on small entities are properly considered.

F. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. Section 1320.8(d), Title 5, Code of Federal Regulations requires that RSPA provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. RSPA currently has two approved information collections affecting this final rule: OMB Control Number 2137-0557, "Approvals for Hazardous Materials" with 25,605 burden hours and \$562,837.40 burden costs; and OMB Control Number 2137-0613, "Subsidiary Hazard Class & Number/Type of Packagings" with 63,309 burden hours and \$216,705 burden costs.

There are minor editorial changes under this rule. However, there is no net increase in burden for OMB Control Number 2137-0557 or OMB Control Number 2137-0613. We estimate that the total information collection and recordkeeping burden as follows:

"Approvals for Hazardous Materials"
OMB Number 2137-0557:
Total Annual Number of Respondents: 3,523.
Total Annual Responses: 3,874.8.
Total Annual Burden Hours: 25,605.
Total Annual Burden Cost: \$562,837.40.

"Subsidiary Hazard Class & Number/Type of Packagings"

OMB Number 2137-0613:
Total Annual Number of Respondents: 250,000.
Total Annual Responses: 6,337,500.
Total Annual Burden Hours: 17,604.
Total Annual Burden Cost: \$216,705.
Total First Year Burden Hours: 45,705.
Total First Year Burden Cost: \$1,115,992.

Requests for a copy of this information collection should be directed to Deborah Boothe or T. Glenn Foster, Office of Hazardous Materials Standards (DHM-10), Research and Special Programs Administration, Room 8422, 400 Seventh Street, SW., Washington, DC 20590-0001, telephone (202) 366-8553.

G. Regulatory Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

H. Unfunded Mandates Reform Act

This final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$120.7 million or more to either State, local or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

I. Environmental Assessment

The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to consider the consequences of major Federal actions and prepare a detailed statement on actions significantly affecting the quality of the human environment. We developed an assessment to determine the effects of these revisions on the environment and whether a more comprehensive environmental impact statement may be required. Our findings conclude that there are no significant environmental impacts associated with this final rule. Consistency in the regulations for the transportation of hazardous materials aids in the shipper's understanding of what is required and permits shippers to more easily comply with safety regulations and avoid the potential for environmental damage or contamination. For interested parties, an

environmental assessment is available in the public docket.

J. Privacy Act

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit <http://dms.dot.gov>.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Education, Hazardous materials transportation, Hazardous waste, Incorporation by reference, Labeling, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Incorporation by reference, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 175

Air carriers, Hazardous materials transportation, Incorporation by reference, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 176

Hazardous materials transportation, Incorporation by reference, Maritime carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Incorporation by reference, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Railroad safety, Reporting and recordkeeping requirements.

■ In consideration of the foregoing, 49 CFR Chapter I is amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

■ 1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101–410 section 4 (28 U.S.C. 2461 note); Pub. L. 104–134 section 31001.

■ 2. In § 171.7, in the paragraph (a)(3) table, the following changes are made:

■ a. Under the entry “International Civil Aviation Organization (ICAO),” the existing entry is revised;

■ b. Under the entry “International Maritime Organization (IMO),” the entry “International Maritime Dangerous Goods (IMDG) Code, 2002 Consolidated Edition, as amended by Amendment 31 (English edition)” is removed and one entry is added in its place;

■ c. Under the entry “United Nations,” the entry “UN Recommendations on the Transport of Dangerous Goods, Twelfth Revised Edition (2001)” is revised;

■ d. Under the entry “United Nations,” the entry “UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Third Revised Edition (1999)” is revised; and

■ e. In paragraph (b), a new entry “American Institute of Chemical Engineers (AIChE),” 3 Park Avenue New York, NY 10016–5991, Process Safety Progress Journal, Vol. 21, No. 2, “Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology” is added in alphabetical order.

The revisions and additions read as follows:

§ 171.7 Reference material.

(a) * * *

(3) *Table of material incorporated by reference.* * * *

Source and name of material	49 CFR reference
* * * * *	*
<i>International Civil Aviation Organization (ICAO),</i>	
* * * * *	*
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), 2005–2006 Edition	171.8; 171.11; 172.202; 172.401; 172.512; 172.602; 173.320; 175.33; 178.3.
<i>International Maritime Organization (IMO),</i>	
* * * * *	*
International Maritime Dangerous Goods Code (IMDG Code), 2004 Edition, Incorporating Amendment 32–04 (English Edition), Volumes 1 and 2	171.12; 172.202; 172.401; 172.502; 172.602; 173.21; 176.2; 176.5; 176.11; 176.27; 176.30; 178.3.
* * * * *	*
<i>United Nations,</i>	
* * * * *	*
UN Recommendations on the Transport of Dangerous Goods, Thirteenth Revised Edition (2003), Volumes I and II	171.12; 172.202; 172.401; 172.502; 173.22; 173.24; 173.24b; 173.197; Part 173, appendix H; 178.274; 178.801.
UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fourth Revised Edition, (2003)	172.102; 173.21; 173.56; 173.57; 173.58; 173.115; 173.124; 173.125; 173.127; 173.128; 173.185.
* * * * *	*

(b) *List of informational materials not requiring incorporation by reference.*

* * *

Source and name of material	49 CFR reference
* * * * *	*
<i>American Institute of Chemical Engineers (AIChE),</i>	

Source and name of material

49 CFR reference

3 Park Avenue New York, NY 10016-5991
Process Safety Progress Journal, Vol. 21, No. 2

Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology

Note to § 173.225(h)(3)(vi).

* * * * *

■ 3. In § 171.8, the definition for "Salvage packaging" is revised to read as follows:

§ 171.8 Definitions and abbreviations.

* * * * *

Salvage packaging means a special packaging conforming to § 173.3 of this subchapter into which damaged, defective, leaking, or non-conforming hazardous materials packages, or hazardous materials that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

* * * * *

■ 4. In § 171.11, paragraphs (d)(15) and (d)(17) are revised to read as follows:

§ 171.11 Use of ICAO Technical Instructions.

* * * * *

(d) * * *

(15) A chemical oxygen generator, including when fitted in protective breathing equipment or other apparatus, is forbidden for transportation aboard a passenger-carrying aircraft and must be approved, classed, described and packaged in accordance with the requirements of this subchapter for transportation on cargo-only aircraft. A chemical oxygen generator that has been used or spent is also forbidden for transportation on a passenger aircraft and cargo aircraft only.

* * * * *

(17) A self-reactive substance that is not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

■ 5. In § 171.12, paragraph (b)(20) is revised to read as follows:

§ 171.12 Import and export shipments.

* * * * *

(b) * * *

(20) A self-reactive substance that is not identified by technical name in the

Self-Reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

■ 6. In § 171.12a, paragraphs (a), (b)(9), and (b)(18) are revised to read as follows:

§ 171.12a Canadian shipments and packagings.

(a) *Scope and applicability.* This section sets forth provisions for the transportation by rail or highway of shipments of hazardous materials which conform to the regulations of the Government of Canada but which may differ from the requirements of this subchapter with regard to hazard communication, classification or packaging. Except as provided in paragraph (b)(5)(iv) of this section, the provisions apply only to shipments which originate in Canada and either terminate in the U.S. or transit the U.S. to a Canadian or foreign destination, and to the return to Canada of bulk packagings that meet the requirements of a DOT or UN Specification and other bulk packagings containing only residues of hazardous materials that were originally imported into the U.S. Reciprocal provisions, applicable to exports from the U.S., appear in the regulations of the Government of Canada.

(b) * * *

(9) For hazardous waste as defined in this subchapter—

(i) The word "Waste" must precede the proper shipping name on shipping papers and packages; and

(ii) The requirements of § 172.204 of this subchapter with respect to the shipper's certification and § 172.205 of this subchapter with respect to hazardous waste manifests are applicable;

* * * * *

(18) A self-reactive substance that is not identified by technical name in the

Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

■ 7. In § 171.14, paragraphs (d) introductory text, (d)(1), and (d)(2) are revised to read as follows:

§ 171.14 Transitional provisions for implementing certain requirements.

* * * * *

(d) A final rule published in the **Federal Register** on December 20, 2004, effective January 1, 2005, resulted in revisions to this subchapter. During the transition period, until January 1, 2006, as provided in paragraph (d)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on December 31, 2004, or the requirements published in the December 20, 2004, final rule.

(1) *Transition dates.* The effective date of the final rule published on December 20, 2004, is January 1, 2005. A delayed compliance date of January 1, 2006 is authorized. On and after January 1, 2006, all applicable regulatory requirements adopted in the final rule in effect on January 1, 2005 must be met.

(2) *Intermixing old and new requirements.* Marking, labeling, placarding, and shipping paper descriptions must conform to either the old requirements of this subchapter in effect on December 31, 2004, or the new requirements of this subchapter in the final rule without intermixing communication elements, except that intermixing is permitted, during the applicable transition period, for packaging, hazard communication, and handling provisions, as follows:

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

■ 8. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 9. In § 172.101, the following amendments are made:

- a. Paragraph (c)(11) is revised;
- b. Paragraph (d)(4) is revised;
- c. Paragraph (i)(3) is revised;
- d. Hazardous Materials Table is revised as set forth below:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

(c) * * *

(11) Except for a material subject to or prohibited by § 173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper's tentative determination according to:

(i) Defining criteria in this subchapter;

(ii) The hazard precedence prescribed in § 173.2a of this subchapter;

(iii) The shipper's knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word "Sample" already appears in the proper shipping name, the word "Sample" must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a "G" in Column (1) of the § 172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

Note to Paragraph (c)(11): For the transportation of self-reactive, organic peroxide and explosive samples, see §§ 173.224(c)(3), 173.225(b)(2) and 173.56(d) of this subchapter, respectively.

* * * * *

(d) * * *

(4) When an entry in this column reads "Comb liq", the material is assigned to the hazard class "Combustible liquid." Additionally, each reference to a Class 3 material is modified to read "Combustible liquid" when that material is reclassified in accordance with § 173.150 (e) or (f) of this subchapter or has a flash point above 60.5 °C (141 °F) but below 93 °C (200 °F).

* * * * *

(i) * * *

(3) *Bulk packaging.* Column 8C specifies the section in part 173 of this subchapter that prescribes packaging requirements for bulk packagings, subject to the limitations, requirements and additional authorizations of Column 7. A "None" in this column means bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter "A" or "W" and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

* * * * *

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§ 172.101 HAZARDOUS MATERIALS TABLE

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		Vessel stow-age
							Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)		(9A)	(9B)	(10A)
	Accellerene, see p-Nitrosodimethylaniline												
	Accumulators, electric, see Batteries, wet, etc.												
	Accumulators, pressurized, pneumatic or hydraulic (containing non-flammable gas), see Articles pressurized, pneumatic or hydraulic (containing non-flammable gas).												
	Acetal	3	UN1088	II	3	IB2, T4, TP1	150	202	242		5 L	60 L	E
	Acetaldehyde	3	UN1089	I	3	A3, B6, T11, TP2, TP7	None	201	243		Forbidden	30 L	E
A	Acetaldehyde ammonia	9	UN1841	III	9	IB8, IP3, IP7, T1, TP33	155	204	240		200 kg	200 kg	A
	Acetaldehyde oxime	3	UN2332	III	3	B1, IB3, T4, TP1	150	203	242		60 L	220 L	A
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243		1 L	30 L	A
	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass	8	UN2790	II	8	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	242		1 L	30 L	A
	Acetic acid solution, with more than 10 percent and less than 50 percent acid, by mass	8	UN2790	III	8	IB3, T4, TP1	154	203	242		5 L	60 L	A
	Acetic anhydride	8	UN1715	II	8, 3	B2, IB2, T7, TP2	154	202	243		1 L	30 L	A
	Acetone	3	UN1090	II	3	2, B9, B14, B32, B76, B77, N34, T20, TP2, TP13, TP38, TP45	None	202	242		Forbidden	Forbidden	B
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	IB2, T4, TP1, TP8	None	227	244		5 L	60 L	D
	Acetone oils	3	UN1091	II	3	IB2, T4, TP1, TP8	150	202	242		5 L	60 L	B
	Acetonitrile	3	UN1648	II	3	IB2, T7, TP2	150	202	242		5 L	60 L	B
	Acetyl acetone peroxide with more than 9 percent by mass active oxygen	Forbidden											
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solution	Forbidden											
	Acetyl bromide	8	UN1716	II	8	B2, IB2, T8, TP2, TP12	154	202	242		1 L	30 L	C
	Acetyl chloride	3	UN1717	II	3, 8	A3, A6, A7, IB1, N34, T8, TP2, TP12	150	202	243		1 L	5 L	B
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water.	Forbidden											
	Acetyl iodide	8	UN1898	II	8	B2, IB2, T7, TP2, TP13	154	202	242		1 L	30 L	C
	Acetyl methyl carbonyl	3	UN2621	III	3	B1, IB3, T2, TP1	150	203	242		60 L	220 L	A
	Acetyl peroxide, solid, or with more than 25 percent in solution	Forbidden			2.1		None	303	None		Forbidden	15 kg	D
	Acetylene, dissolved	2.1	UN1001										25, 40, 57
	Acetylene (liquefied)	Forbidden											
	Acetylene silver nitrate	Forbidden											
	Acetylene tetrabromide, see Tetrabromoethane												
	Acid butyl phosphate, see Butyl acid phosphate												
	Acid, sludge, see Sludge acid												
	Acridine	6.1	UN2713	III	6.1	IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A
	Acrolein dimer, stabilized	3	UN2607	III	3	B1, IB3, T2, TP1	150	203	242		60 L	220 L	A
	Acrolein, stabilized	6.1	UN1092	I	6.1, 3	1, B9, B14, B30, B42, B72, B77, T22, TP2, TP7, TP13, TP38, TP44	None	226	244		Forbidden	Forbidden	D
	Acrylamide, solid	6.1	UN2074	III	6.1	IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A
	Acrylamide solution	6.1	UN3426	III	6.1	IB3, T4, TP1	153	203	241		60 L	220 L	A
	Acrylic acid, stabilized	8	UN2218	III	8, 3	B2, IB2, T7, TP2	154	202	243		1 L	30 L	C
	Acrylonitrile, stabilized	3	UN1093	I	3, 6.1	B9, T14, TP2, TP13	None	201	243		Forbidden	30 L	E
	Actuating cartridge, explosive, see Cartridges, power device												
	Adhesives, containing a flammable liquid	3	UN1133	I	3	B42, T11, TP1, TP8, TP27	150	201	143		1 L	30 L	B
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242		5 L	60 L	B

			III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A
			III	6.1	IB3, T3, TP1	153	203	241	60 L	220 L	A
				2.2, 8	153, A34	306	None	None	75 kg	150 kg	A
				2.1	153, N82	306	None	None	75 kg	150 kg	A
				2.1	153, N82	306	304	None	Forbidden	150 kg	A
				2.2	153	306	None	None	75 kg	150 kg	A
				2.2, 6.1,	153	306	None	None	Forbidden	Forbidden	A
			II	1.4G	161	None	62	None	Forbidden	75 kg	O2
			III	9	160	166	166	166	25 kg	100 kg	A
				2.2	78	306	302	302	75 kg	150 kg	A
				2.2	T75, TP5, TP22	320	316	318	Forbidden	150 kg	D
				5.1,		320	316	319,	Forbidden	Forbidden	D
				5.1,		320	316	319,	Forbidden	Forbidden	D
			I	3, 6.1,		None	172	None	Forbidden	42 L	E
				8,							
			II	3, 8	IB2	150	202	243	1 L	5 L	B
			II	3	24, 149, B1, IB2, T4, TP1	150	202	242	5 L	60 L	A
			III	3	24, B1, IB3, N11, T2, TP1	150	203	242	60 L	220 L	A
					T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E
			II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B
			III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A
			I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E
			II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B
			III	3, 6.1	B1, IB3, T7, TP1, TP28	None	203	242	60 L	220 L	A
			I	3	T11, TP1, TP27	None	201	243	1 L	30 L	E
			II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B
			III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A
			I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E
			II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	1 L	60 L	B
			III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A
			II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A
			II	4.2, 8	64, A7, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B
			III	4.2, 8	64, A7, IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	B
			I	4.3	A2, A3, A7, B48, N34	None	201	244	Forbidden	1 L	D
			I	4.3	A2, A3, A7, N34	None	201	244	Forbidden	1 L	D
			I	4.3	IB4, IP1, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D
			II	4.3	A6, A7, A8, A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E
			I	4.3	A2, A3, A7	None	201	244	Forbidden	1 L	D
			II	4.2	65, A7, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	B
			III	4.2	65, A7, IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	B
			II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E
			I	4.3	A19, N34, N40	None	201	244	Forbidden	1 L	E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Alkaline earth metal amalgams, solid	4.3	UN3402	I	4.3	A19, N34, N40, T9, TP7, TP33	None	211	242	Forbidden	15 kg	D	52
	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	6.1	UN3140	I	6.1	A4, T14, TP2, TP27	None	201	243	1 L	30 L	A	
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	
G				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
	Alkaloids, solid, n.o.s. [or Alkaloid salts, solid, n.o.s. [poisonous]]	6.1	UN1544	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with more than 5 percent free sulfuric acid.	8	UN2584	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	242	1 L	30 L	B	
	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with not more than 5 percent free sulfuric acid.	8	UN2586	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	B	
	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid, with more than 5 percent free sulfuric acid.	8	UN2593	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with not more than 5 percent free sulfuric acid.	8	UN2585	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues)	8	UN3145	II	8	A6, T14, TP2, IB2, T11, TP2, TP27	None	201	243	0.5 L	2.5 L	B	
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	
	Alkylphenols, solid, n.o.s. (including C2-C12 homologues)	8	UN2430	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Alkylsulfuric acids	8	UN2571	II	8	B2, IB2, T8, TP2, TP12, TP13, TP28	154	202	242	1 L	30 L	C	14
	Allethrin, see Pesticides, liquid, toxic, n.o.s.			II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl acetate	3	UN2333	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl alcohol	6.1	UN1098	I	6.1, 3	T14, TP2, TP13 T14, TP2, TP13	None	201	243	Forbidden	30 L	B	40
	Allyl bromide	3	UN1099	I	3, 6.1	T14, TP2, TP13 T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl chloride	3	UN1100	I	3, 6.1	2, B9, B14, B32, B74, N41, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Allyl chloroformate, see Allyl chloroformate			I	6.1, 3, 8	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl chloroformate	6.1	UN1722	I	6.1, 3, 8	T14, TP2, TP13 B1, IB3, T2, TP1 A3, A6, IB1, N34, T7, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl ethyl ether	3	UN2335	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Allyl formate	3	UN2336	I	3, 6.1	T14, TP2, TP13 B1, IB3, T2, TP1 A3, A6, IB1, N34, T7, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Allyl glycidyl ether	3	UN2219	III	3	IB2, T7, TP1, TP13	150	203	242	60 L	220 L	A	
	Allyl iodide	3	UN1723	II	3, 8	IB2, T7, TP1, TP13	150	202	243	1 L	5 L	B	40
	Allyl isothiocyanate, stabilized	6.1	UN1545	II	6.1, 3	A3, A7, IB2, T7, TP2	None	202	243	Forbidden	60 L	D	40
	Allylamine	6.1	UN2334	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40

	8	UN1724	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	202	243	Forbidden	30 L	C	40
Allyltrichlorosilane, stabilized						None					
Aluminum alkyl halides, liquid	4.2	UN3052	I	4.2, 4.3	B9, B11, T21, TP2, TP7	181	244	Forbidden	Forbidden	D	134
Aluminum alkyl halides, solid	4.2	UN3461	I	4.2, 4.3	T21, TP7, TP33	181	244	Forbidden	Forbidden	D	134
Aluminum alkyl hydrides	4.2	UN3076	I	4.2, 4.3	B9, B11, T21, TP2, TP7	181	244	Forbidden	Forbidden	D	
Aluminum alkyls	4.2	UN3051	I	4.2, 4.3	B9, B11, T21, TP2, TP7	181	244	Forbidden	Forbidden	D	
Aluminum borohydride or Aluminum borohydride in devices	4.2	UN2870	I	4.2, 4.3	B11, T21, TP7, TP33	181	244	Forbidden	Forbidden	D	
Aluminum bromide, anhydrous	8	UN1725	II	8	IB8, IP2, IP4, T3, TP33	212	240	15 kg	50 kg	A	40
Aluminum bromide, solution	8	UN2580	III	8	IB3, T4, TP1	203	241	5 L	60 L	A	
Aluminum carbide	4.3	UN1394	II	4.3	A20, IB7, IP2, N41, T3, TP33	212	242	15 kg	50 kg	A	52
Aluminum chloride, anhydrous	8	UN1726	II	8	IB8, IP2, IP4, T3, TP33	212	240	15 kg	50 kg	A	40
Aluminum chloride, solution	8	UN2581	III	8	IB3, T4, TP1	203	241	5 L	60 L	A	
Aluminum dross, wet or hot	Forbidden										
Aluminum ferrosilicon powder	4.3	UN1395	II	4.3, 6.1	A19, IB5, IP2, T3, TP33	212	242	15 kg	50 kg	A	
			III	4.3, 6.1	A19, A20, IB4	213	241	25 kg	100 kg	A	
Aluminum hydride	4.3	UN2463	I	4.3	A19, N40	211	242	Forbidden	15 kg	E	40, 52, 85
Aluminum, molten	9	NA9260	III	9	IB3, T1, TP3	None	242	Forbidden	15 kg	E	40, 85
Aluminum nitrate	5.1	UN1438	III	5.1	A1, A29, IB8, IP3, T1, TP33	213	240	25 kg	100 kg	A	
Aluminum phosphate solution, see Corrosive liquids, etc											
Aluminum phosphide	4.3	UN1397	I	4.3, 6.1	A8, A19, N40	211	242	Forbidden	15 kg	E	
Aluminum phosphide pesticides	6.1	UN3048	I	6.1	A8, IB7, IP1, T6, TP33	211	242	Forbidden	15 kg	E	
Aluminum powder, coated	4.1	UN1309	II	4.1	IB8, IP2, IP4, T3, TP33	212	240	15 kg	50 kg	A	13, 39, 52, 53, 74, 101
			III	4.1	IB8, IP3, T1, TP33	213	240	25 kg	100 kg	A	13, 39, 52, 53, 74, 101
Aluminum powder, uncoated	4.3	UN1396	II	4.3	A19, A20, IB7, IP2, T3, TP33	212	242	15 kg	50 kg	A	39, 52, 53
			III	4.3	A19, A20, IB8, IP4, T1, TP33	213	241	25 kg	100 kg	A	39, 52, 53
Aluminum resinates	4.1	UN2715	III	4.1	IB6, T1, TP33	213	240	25 kg	100 kg	A	
Aluminum silicon powder, uncoated	4.3	UN1398	III	4.3	A1, A19, IB8, IP4, T1, TP33	213	241	25 kg	100 kg	A	
Aluminum smelting by-products or Aluminum remelting by-products	4.3	UN3170	II	4.3	128, B115, IB7, IP2, T3, TP33	212	242	15 kg	50 kg	B	39, 40, 52, 53, 85, 103
			III	4.3	128, B115, IB8, IP4, T1, TP33	213	241	25 kg	100 kg	B	85, 103
Anatols, see Explosives, blasting, type B											
Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	UN2733	I	3, 8	T14, TP1, TP27	201	243	0.5 L	2.5 L	D	40
			II	3, 8	IB2, T11, TP1, TP27	202	243	1 L	5 L	B	40
			III	3, 8	B1, IB3, T7, TP1, TP28	203	242	5 L	60 L	A	40
Amines, liquid, corrosive, flammable, n.o.s. or Polyamines, liquid, corrosive, flammable, n.o.s.	8	UN2734	I	8, 3	A3, A6, N34, T14, TP2, TP27	201	243	0.5 L	2.5 L	A	52
			II	8, 3	IB2, T11, TP2, TP27	202	243	1 L	30 L	A	52
Amines, liquid, corrosive, n.o.s., or Polyamines, liquid, corrosive, n.o.s.	8	UN2735	I	8	A3, A6, B10, N34, T14, TP2, TP27	201	243	0.5 L	2.5 L	A	52
			II	8	B2, IB2, T11, TP1, TP27	202	242	1 L	30 L	A	52
			III	8	IB3, T7, TP1, TP28	203	241	5 L	60 L	A	52
Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	UN3259	I	8	IB7, IP1, T6, TP33	211	242	1 kg	25 kg	A	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)		(9A)	(9B)	(10A)	(10B)
	2-Amino-4-chlorophenol	6.1	UN2673	II	8	IB8, IP2, IP4, T3, TP33	154	212	240		15 kg	50 kg	A	52
	2-Amino-5-diethylaminopentane	6.1	UN2946	III	8	IB8, IP3, T1, TP33	154	213	240		25 kg	100 kg	A	52
	2-Amino-4,6-Dinitrophenol, wetted with not less than 20 percent water by mass	4.1	UN3317	I	4.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	A	
	N-(2-Aminoethoxy) ethanol	8	UN3055	III	8	IB3, T4, TP1	154	203	241		60 L	220 L	A	
	N-Aminoethylpiperazine	8	UN2815	III	8	23, A8, A19, A20, N41	None	211	None		1 kg	15 kg	E	28, 36
+	Aminophenols (o-, m-, p-)	6.1	UN2512	III	6.1	IB3, T4, TP1	154	203	241		5 L	60 L	A	12
	Aminopropylmethanamine, see Amines, etc					IB3, T4, TP1	154	203	241		5 L	60 L	A	
	n-Aminopropylmorpholine, see Amines, etc					IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A	
	Aminopyridines (o-, m-, p-)	6.1	UN2671	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	B	12, 40
I	Ammonia, anhydrous	2.3	UN1005		2.3, 8	4, T50	None	304	314		Forbidden	Forbidden	D	40, 57
D	Ammonia, anhydrous	2.2	UN1005		2.2	13, T50	None	304	314		Forbidden	Forbidden	D	40, 57
D	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.2	UN3318		2.2	13, T50	None	304	314		Forbidden	Forbidden	D	40, 57
I	Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.	2.3	UN3318		2.3, 8	4, T50	None	304	314		Forbidden	Forbidden	D	40, 57
	Ammonia solutions, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia.	8	UN2672	III	8	IB3, IP8, T7, TP1	154	203	241		5 L	60 L	A	40, 85
	Ammonia solutions, relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia.	2.2	UN2073		2.2		306	304	314		Forbidden	150 kg	E	40, 57
	Ammonium arsenate	6.1	UN1546	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	A	53
	Ammonium azide	Forbidden												
	Ammonium bifluoride, solid, see Ammonium hydrogen difluoride, solid													
	Ammonium bifluoride solution, see Ammonium hydrogen difluoride, solution													
	Ammonium bromate	Forbidden												
	Ammonium chlorate	Forbidden												
	Ammonium dichromate	5.1	UN1439	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242		5 kg	25 kg	A	52
	Ammonium dinitro-o-cresolate, solid	6.1	UN1843	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	B	36, 65, 66, 77
	Ammonium dinitro-o-cresolate solution	6.1	UN3424	II	6.1	IB2, T7, TP2	153	202	243		5 L	60 L	B	36, 66, 78, 91
				III	6.1	IB2, T7, TP2	153	203	241		60 L	220 L	A	36, 66, 78, 91
	Ammonium fluoride	6.1	UN2505	III	6.1	IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A	52
	Ammonium fluosilicate	6.1	UN2854	III	6.1	IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A	52
	Ammonium fulminate	Forbidden												
	Ammonium hydrogen sulfate	8	UN2506	II	8	IB8, IP2, IP4, T3, TP33	154	212	240		15 kg	50 kg	A	40
	Ammonium hydrogendifluoride, solid	8	UN1727	II	8	IB8, IP2, IP4, TP33	154	212	240		15 kg	50 kg	A	25, 40, 52
	Ammonium hydrogendifluoride, solution	8	UN2817	II	8, 6.1	N34, T3, TP33	154	202	243		1 L	30 L	B	40
				III	8, 6.1	IB2, N34, T8, TP2, TP12, TP13	154	203	241		5 L	60 L	B	40, 95
						TP1, TP12, TP13								
	Ammonium hydrosulfide, solution, see Ammonium sulfide solution													
	Ammonium hydroxide, see Ammonia solutions, etc	6.1	UN2859	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	A	44, 89, 100, 141
D	Ammonium metavanadate													
	Ammonium nitrate based fertilizer	5.1	UN2067	III	5.1	52, 150, IB8, IP3, T1, TP33	152	213	240		25 kg	100 kg	B	48, 59, 60, 66, 117

A W	Ammonium nitrate based fertilizer	9	UN2071	III	9	132, IB8, IP3 147, 163	155	213	240	200 kg Forbidden	A	48, 59, 60, 66, 124
	Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, intermediate for blasting explosives.	5.1	UN3375	II	1.5D .. 5.1 ..	.....	None	214	214	Forbidden	D	19E 59, 60 19E
D	Ammonium nitrate-fuel oil mixture containing only pilled ammonium nitrate and fuel oil	1.5D	NA0331	II	1.5D .. 5.1 ..	.....	None	62	None	Forbidden	10	124
	Ammonium nitrate, liquid (not concentrated solution)	5.1	UN2426	II	1.1D .. 5.1 ..	.....	None	62	243	Forbidden	10	19E
	Ammonium nitrate, with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.	1.1D	UN0222	II	1.1D .. 5.1 ..	.....	None	62	None	Forbidden	D	19E
	Ammonium nitrate, with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance.	5.1	UN1942	III	5.1 ..	.....	152	213	240	100 kg	A	48, 59, 60, 116
	Ammonium nitrate	Forbidden	.....	II	1.1D .. 5.1 ..	.....	None	62	None	Forbidden	10	19E
	Ammonium nitrate	1.1D	UN0402	II	1.1D .. 5.1 ..	.....	107	212	242	5 kg	E	58, 69
	Ammonium perchlorate	5.1	UN1442	II	5.1 ..	.....	107, A9, IB6, IP2, T3, TP33	212	242	Forbidden	10	19E
	Ammonium perchlorate	Forbidden	.....	III	5.1 ..	.....	A1, A29, IB8, IP3, T1, TP33	213	240	100 kg	A	.....
	Ammonium permanganate	5.1	UN1444	III	5.1 ..	.....	.....	213	240	Forbidden	10	5E, 19E
	Ammonium persulfate	1.1D	UN0004	II	1.1D ..	.....	.....	62	None	Forbidden	10	28, 36 12, 40, 52
	Ammonium picrate, dry or wetted with less than 10 percent water, by mass	4.1	UN1310	I	4.1 ..	.....	23, A2, N41 IB2, T7, TP2, TP13	211	None	0.5 kg	D	12, 40, 52
	Ammonium picrate, wetted with not less than 10 percent water, by mass	8	UN2818	II	8, 6.1	.....	.....	202	243	30 L	B	12, 40, 52
	Ammonium polysulfide, solution .....	.....	.....	III	8, 6.1	.....	IB3, T4, TP1, TP13	203	241	60 L	B	12, 40, 52
	.....	6.1	UN2861	II	6.1 ..	.....	IB8, IP2, IP4, T3, TP33	212	242	100 kg	A	44, 89, 100, 141
	Ammonium polyvanadate .....	.....	.....	II	6.1 ..	.....	.....	202	243	30 L	B	12, 22, 52, 100
	Ammonium silicofluoride, see Ammonium fluosilicate	8	UN2683	II	8, 6.1, 3.	.....	IB1, T7, TP2, TP13	154	202	1 L	.....	.....
	Ammonium sulfide solution .....	.....	.....	II	1.2G .. 1.3G .. 1.4G .. 1.3J ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, blank, see Cartridges for weapons, blank	1.2G	UN0171	II	1.2G ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, illuminating with or without buster, expelling charge or propelling charge	1.3G	UN0254	II	1.3G ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, illuminating with or without buster, expelling charge or propelling charge	1.4G	UN0297	II	1.4G ..	.....	.....	62	None	Forbidden	75 kg	02
	Ammunition, incendiary liquid or gel, with buster, expelling charge or propelling charge	1.3J	UN0247	II	1.3J ..	.....	.....	62	None	Forbidden	04	23E
	Ammunition, incendiary (water-activated contrivances) with buster, expelling charge or propelling charge, see Contrivances, water-activated, etc. ....	.....	.....	II	1.2H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, incendiary, white phosphorus, with buster, expelling charge or propelling charge	1.2H	UN0243	II	1.2H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	.....	1.3H	UN0244	II	1.3H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, incendiary, white phosphorus, with buster, expelling charge or propelling charge	1.2G	UN0009	II	1.2G ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, incendiary with or without buster, expelling charge, or propelling charge	1.3G	UN0010	II	1.3G ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, incendiary with or without buster, expelling charge, or propelling charge	1.4G	UN0300	II	1.4G ..	.....	.....	62	None	Forbidden	75 kg	02
	Ammunition, practice	1.4G	UN0362	II	1.4G ..	.....	.....	62	None	Forbidden	75 kg	02
	Ammunition, practice	1.3G	UN0488	II	1.3G ..	.....	.....	62	None	Forbidden	03	.....
	Ammunition, practice	1.4G	UN0363	II	1.4G ..	.....	.....	62	None	Forbidden	75 kg	02
	Ammunition, proof .....	.....	.....	II	1.2H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, rocket, see Warheads, rocket etc .....	.....	.....	II	1.2H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, SA (small arms), see Cartridges for weapons, etc .....	.....	.....	II	1.3H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, smoke (water-activated contrivances), white phosphorus, with buster, expelling charge or propelling charge, see Contrivances, water-activated, etc.	1.2H	UN0245	II	1.2H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, smoke (water-activated contrivances), without white phosphorus or phosphides, with buster, expelling charge or propelling charge, see Contrivances, water-activated, etc.	1.3H	UN0246	II	1.3H ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition smoke, white phosphorus with buster, expelling charge, or propelling charge	1.2G	UN0015	II	1.2G ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E
	.....	1.3G	UN0016	II	1.3G ..	.....	.....	62	None	Forbidden	08	8E, 14E, 15E, 17E, 20E

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ammunition, smoke with or without burster, expelling charge or propelling charge	1.4G	UN0303	II	1.4G ..			62	None	Forbidden	75 kg		7E, 8E, 14E, 15E, 17E
	<i>Ammunition, sporting, see Cartridges for weapons, etc. (UN 0012; UN 0328; UN 0339)</i>												
	Ammunition, tear-producing, non-explosive, without burster or expelling charge, non-fuzed	6.1	UN2017	II	6.1, 8		None	212	None	Forbidden	50 kg	E	13, 40
	Ammunition, tear-producing with burster, expelling charge or propelling charge	1.2G	UN0018	II	1.2G, 8			62	None	Forbidden	Forbidden		8E, 17E
	Ammunition, tear-producing with burster, expelling charge or propelling charge	1.3G	UN0019	II	6.1, 1.3G, 8			62	None	Forbidden	Forbidden		20E, 8E, 17E, 20E
	Ammunition, tear-producing with burster, expelling charge or propelling charge	1.4G	UN0301	II	6.1, 1.4G, 8			62	None	Forbidden	75 kg		7E, 8E, 14E, 15E, 17E
	Ammunition, toxic, non-explosive, without burster or expelling charge, non-fuzed	6.1	UN2016	II	6.1		None	212	None	Forbidden	100 kg	E	13, 40
	<i>Ammunition, toxic (water-activated contrivances), with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc.</i>												
G	Ammunition, toxic with burster, expelling charge, or propelling charge	1.2K	UN0020	II	1.2K, 6.1			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Ammunition, toxic with burster, expelling charge, or propelling charge	1.3K	UN0021	II	1.3K, 6.1			62	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Amyl acetates	3	UN1104	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl acid phosphate	8	UN2819	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Amyl butyrates	3	UN2620	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl chlorides	3	UN1107	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Amyl formates	3	UN1109	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl mercaptans	3	UN1111	II	3	A3, A6, IB2, T4, TP1	None	202	242	5 L	60 L	B	95, 102
	n-Amyl methyl ketone	3	UN1110	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Amyl nitrate	3	UN1112	III	3	B1, IB3, T2, TP1	150	202	242	5 L	60 L	A	40
	Amyl nitrates	3	UN1113	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Amylamines	3	UN1106	III	3, 8	IB2, T7, TP1	150	202	242	1 L	5 L	B	
	Amylchlorosilane	8	UN1728	II	8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	
						A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Anhydrous ammonia, see Ammonia, anhydrous												
	Anhydrous hydrofluoric acid, see Hydrogen fluoride, anhydrous												
+	Aniline	6.1	UN1547	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40, 52
	Aniline hydrochloride	6.1	UN1548	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Aniline oil, see Aniline												
	Anilines	6.1	UN2431	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Anisoles	3	UN2222	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Anisoyl chloride	8	UN1729	II	8	B2, B4, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Anti-freeze, liquid, see Flammable liquids, n.o.s.												
	Antimony chloride, see Antimony trichloride												
	Antimony compounds, inorganic, liquid, n.o.s.	6.1	UN3141	III	6.1	35, IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
	Antimony compounds, inorganic, solid, n.o.s.	6.1	UN1549	III	6.1	35, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony lactate	6.1	UN1550	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Antimony pentachloride, liquid	8	UN1730	II	8	B2, IB2, T7, TP2	None	202	242	1 L	30 L	C	40
	Antimony pentachloride, solutions	8	UN1731	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
				III	8	IB3, T4, TP1	154	203	241	5 L	60 L	C	40

Antimony pentafluoride	8	UN1732	II	8, 6.1	A3, A6, A7, A10, IB2, N3, N36, T7, TP2	None	202	243	Forbidden	30 L	D	44, 89, 100, 141
Antimony potassium tartrate	6.1	UN1551	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
Antimony powder	6.1	UN2871	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
Antimony sulfide and a chlorate, mixtures of	Forbidden											
Antimony sulfide, solid, see Antimony compounds, inorganic, n.o.s.	8	UN1733	II	8	IB2, IB2	154	202	242	1 L	30 L	C	40
Antimony trichloride, liquid	8	UN1733	II	8	IB8, IP2, IP4	154	212	240	15 kg	50 kg	A	40
Aqua ammonia, see Ammonia solution, etc												
Argon, compressed	2.2	UN1006		2.2		306	302	314, 315	75 kg	150 kg	A	.....
Argon, refrigerated liquid (cryogenic liquid)	2.2	UN1951		2.2	T75, TP5	320	316	318	500 kg	500 kg	B	.....
Arsenic	6.1	UN1558	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Arsenic acid, liquid	6.1	UN1553	I	6.1	T20, TP2, TP7, TP13	None	201	243	1 L	30 L	B	46
Arsenic acid, solid	6.1	UN1554	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Arsenic bromide	6.1	UN1555	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	12, 40
Arsenic chloride, see Arsenic trichloride												
Arsenic compounds, liquid, n.o.s.; arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.	6.1	UN1556	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 137
Arsenic compounds, solid, n.o.s.; inorganic, including arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.	6.1	UN1557	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 137
Arsenic pentoxide			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40, 137
Arsenic sulfide and a chlorate, mixtures of	6.1	UN1559	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	137
Arsenic trichloride	Forbidden	6.1	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	137
Arsenic trioxide	6.1	UN1561	II	6.1	IB8, IP2, IP4, T3, TP45	153	212	242	25 kg	100 kg	A	.....
Arsenic, white, solid, see Arsenic trioxide												
Arsenical dust	6.1	UN1562	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Arsenical pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2760	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
Arsenical pesticides, liquid, toxic	6.1	UN2994	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Arsenical pesticides, liquid, toxic			I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
Arsenical pesticides, liquid, toxic			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
Arsenical pesticides, liquid, toxic			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Arsenical pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN2993	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
Arsenious acid, solid, see Arsenic trioxide			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
Arsenious and mercuric iodide solution, see Arsenic compounds, liquid, n.o.s.			III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Arsine	6.1	UN2759	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
Arsine			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
Arsine			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Arsenous acid, solid, see Arsenic trioxide												
Arsenous and mercuric iodide solution, see Arsenic compounds, liquid, n.o.s.												
Arsine	2.3	UN2188		2.3		None	192	245	Forbidden	Forbidden	D	40
Arsine				2.1.								
Articles, explosive, extremely insensitive or Articles, EEI	1.6N	UN0486	II	1.6N		None	62	None	Forbidden	Forbidden	07	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) Packaging (§173.***)				(9) Quantity limitations		(10) Vessel stow-age	
									Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)									(8A)	(8B)	(8C)		(9A)	(9B)	(10A)	(10B)
G	Articles, explosive, n.o.s.	1.4S	UN0349	II	1.4S ..	101	1.4S ..	101	None ..	62	None	None	25 kg	100 kg	05	.....
G	Articles, explosive, n.o.s.	1.4B	UN0350		1.4B ..	101	1.4B ..	101	None	62	None	None	Forbidden	Forbidden	06	.....
G	Articles, explosive, n.o.s.	1.4C	UN0351	II	1.4C ..	101	1.4C ..	101	None	62	None	None	Forbidden	75 kg	06	.....
G	Articles, explosive, n.o.s.	1.4D	UN0352	II	1.4D ..	101	1.4D ..	101	None	62	None	None	Forbidden	75 kg	06	.....
G	Articles, explosive, n.o.s.	1.4G	UN0353	II	1.4G ..	101	1.4G ..	101	None	62	None	None	Forbidden	75 kg	06	.....
G	Articles, explosive, n.o.s.	1.1L	UN0354	II	1.1L ..	101	1.1L ..	101	None	62	None	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.2L	UN0355	II	1.2L ..	101	1.2L ..	101	None	62	None	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.3L	UN0356	II	1.3L ..	101	1.3L ..	101	None	62	None	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
G	Articles, explosive, n.o.s.	1.1C	UN0462	II	1.1C ..	101	1.1C ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.1D	UN0463	II	1.1D ..	101	1.1D ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.1E	UN0464	II	1.1E ..	101	1.1E ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.1F	UN0465	II	1.1F ..	101	1.1F ..	101	None	62	None	None	Forbidden	Forbidden	08	.....
G	Articles, explosive, n.o.s.	1.2C	UN0466	II	1.2C ..	101	1.2C ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.2D	UN0467	II	1.2D ..	101	1.2D ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.2E	UN0468	II	1.2E ..	101	1.2E ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.2F	UN0469	II	1.2F ..	101	1.2F ..	101	None	62	None	None	Forbidden	Forbidden	08	.....
G	Articles, explosive, n.o.s.	1.3C	UN0470	II	1.3C ..	101	1.3C ..	101	None	62	None	None	Forbidden	Forbidden	07	.....
G	Articles, explosive, n.o.s.	1.4E	UN0471	II	1.4E ..	101	1.4E ..	101	None	62	None	None	Forbidden	75 kg	06	.....
G	Articles, explosive, n.o.s.	1.4F	UN0472	II	1.4F ..	101	1.4F ..	101	None	62	None	None	Forbidden	Forbidden	08	.....
G	Articles, pressurized pneumatic or hydraulic containing non-flammable gas	2.2	UN3164	.....	2.2 ..	.....	2.2 ..	.....	306	302, 304	None	None	No limit	No limit	A	.....
Articles, pyrophoric		1.2L	UN0380	II	1.2L ..	.....	1.2L ..	.....	None	62	None	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
Articles, pyrotechnic for technical purposes		1.1G	UN0428	II	1.1G ..	.....	1.1G ..	.....	None	62	None	None	Forbidden	Forbidden	07	.....
Articles, pyrotechnic for technical purposes		1.2G	UN0429	II	1.2G ..	.....	1.2G ..	.....	None	62	None	None	Forbidden	Forbidden	07	.....
Articles, pyrotechnic for technical purposes		1.3G	UN0430	II	1.3G ..	.....	1.3G ..	.....	None	62	None	None	Forbidden	Forbidden	07	.....
Articles, pyrotechnic for technical purposes		1.4G	UN0431	II	1.4G ..	.....	1.4G ..	.....	None	62	None	None	Forbidden	75 kg	06	.....
Articles, pyrotechnic for technical purposes		1.4S	UN0432	II	1.4S ..	.....	1.4S ..	.....	None	62	None	None	Forbidden	100 kg	05	.....
D	Asbestos	9	NA2212	III	9 .....	.....	9 .....	.....	155	216	240	240	200 kg	200 kg	A	34, 40
Ascaridole (organic peroxide)		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Asphalt, at or above its flash point		3	NA1999	III	3 .....	.....	3 .....	.....	150	203	247	247	Forbidden	Forbidden	D	.....
Asphalt, cut back, see Tars, liquid, etc.		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Automobile, motorcycle, tractor, other self-propelled vehicle, engine, or other mechanical apparatus, see Vehicles or Battery etc.		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aviation regulated liquid, n.o.s.		9	UN3384	.....	9 .....	.....	9 .....	.....	155	204	.....	.....	No limit	No limit	A	.....
Aviation regulated solid, n.o.s.		9	UN3385	.....	9 .....	.....	9 .....	.....	155	204	.....	.....	No limit	No limit	A	.....
Azaurolic acid (salt of) (dry)		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Azido guanidine picrate (dry)		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5-Azido-1-hydroxy tetrazole		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Azido hydroxy tetrazole (mercury and silver salts)		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3-Azido-1,2-Propylene glycol dinitrate		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Azidothiocarbonyl acid		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Azidoethyl nitrate		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1-Azidodiphosphine oxide-(tris), see Tris-(1-azidodiphenyl) phosphine oxide, solution		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Azodicarbonamide		4.1	UN3242	II	4.1	38, IB8, T3, TP33	4.1	38, IB8, T3, TP33	151	212	240	240	Forbidden	Forbidden	D	12, 52, 53, 74
Azotetrazole (dry)		Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barium		4.3	UN1400	II	4.3	A19, IB7, IP2, T3, TP33	4.3	A19, IB7, IP2, T3, TP33	151	212	241	241	15 kg	50 kg	E	52
Barium alloys, pyrophoric		4.2	UN1854	I	4.2	T21, TP7, TP33	4.2	T21, TP7, TP33	None	181	None	None	Forbidden	Forbidden	D	.....
Barium azide, dry or wetted with less than 50 percent water, by mass		1.1A	UN0224	II	1.1A, 6.1.	111, 117	1.1A, 6.1.	111, 117	None	62	None	None	Forbidden	Forbidden	12	.....

Barium azide, wetted with not less than 50 percent water, by mass	4.1	UN1571	I	4.1, 6.1	162, A2	None	182	None	Forbidden	0.5 kg	D	28
Barium bromate	5.1	UN2719	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium chlorate, solid	5.1	UN1445	II	5.1, 6.1	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium chlorate, solution	5.1	UN3405	II	5.1, 6.1	A9, IB2, N34, T4, TP1	152	202	243	1 L	5 L	A	56, 58, 133
			III	5.1, 6.1	A9, IB2, N34, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58, 133
Barium compounds, n.o.s.	6.1	UN1564	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Barium cyanide	6.1	UN1565	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
Barium hypochlorite with more than 22 percent available chlorine	5.1	UN2741	II	5.1, 6.1	A7, A9, IB8, IP2, IP4, N34, T3, TP33	152	212	None	5 kg	25 kg	B	4, 52, 56, 58, 106
Barium nitrate	5.1	UN1446	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
Barium oxide	6.1	UN1884	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Barium perchlorate, solid	5.1	UN1447	II	5.1, 6.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Barium perchlorate, solution	5.1	UN3406	II	5.1, 6.1	IB2, T4, TP1	152	202	243	1 L	5 L	A	56, 58, 133
			III	5.1, 6.1	IB2, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58, 133
Barium permanganate	5.1	UN1448	II	5.1, 6.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Barium peroxide	5.1	UN1449	II	5.1, 6.1	A9, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 56, 75
Barium selenate, see Selenates or Selenites												
Barium selenite, see Selenates or Selenites												
Batteries, containing sodium	4.3	UN3292	II	4.3		189	189	189	Forbidden	No limit	A	
Batteries, dry, containing potassium hydroxide solid, electric, storage	8	UN3028	III	8		None	213	None	25 kg gross	230 kg	A	
Batteries, wet, filled with acid, electric storage	8	UN2794	III	8		159	159	159	30 kg gross	gross		
Batteries, wet, filled with alkali, electric storage	8	UN2795	III	8		159	159	159	No limit	No limit	A	
Batteries, wet, non-spillable, electric storage	8	UN2800	III	8		159	159	159	30 kg gross	No limit	A	
Batteries, dry, not subject to the requirements of this subchapter					130				No Limit	No Limit	A	
Battery fluid, acid	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12	154	202	242	1 L	30 L	B	
Battery fluid, alkali	8	UN2797	II	8	B2, IB2, N6, T7, TP2, TP28	154	202	242	1 L	30 L	A	29
Battery lithium type, see Lithium batteries etc												
Battery-powered vehicle or Battery-powered equipment					134	220	220	None	No limit	No limit		
Battery, wet, filled with acid or alkali with vehicle or mechanical equipment containing an internal combustion engine, see Vehicle, etc. or Engines, Internal combustion, etc.												
Benzaldehyde	9	UN1990	III	9	IB3, T2, TP1	155	203	241	100 L	220 L	A	
Benzene	3	UN1114	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Benzene diazonium chloride (dry)	Forbidden											
Benzene diazonium nitrate (dry)	Forbidden											
Benzene phosphorus dichloride												
Benzene phosphorus trichloride, see Phenyl phosphorus trichloride												
Benzene sulfonil chloride	8	UN2225	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	40
Benzene triozonide	Forbidden											
Benzenethiol, see Phenyl mercaptan												
Benzidine	6.1	UN1885	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Benzol, see Benzene												
Benzonitrile	6.1	UN2224	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40, 52
Benzoquinone	6.1	UN2587	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Benzotrifluoride	8	UN2226	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
Benzotriazoles (dry)	3	UN2338	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Benzoyl azide	Forbidden											
Benzoyl chloride	8	UN1736	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	242	1 L	30 L	C	40
Benzyl bromide	6.1	UN1737	II	6.1, 8	A3, A7, IB2, N33, N34, T6, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
	Benzyl chloride	6.1	UN1738	II	6.1, 8	A3, A7, B70, IB2, N33, N42, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40	
	Benzyl chloride <i>unstabilized</i>	6.1	UN1738	II	6.1, 8	A3, A7, B8, B11, IB2, N33, N34, N43, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40	
	Benzyl chloroformate	8	UN1739	I	8	A3, A6, B4, N41, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D	40	
	Benzyl iodide	6.1	UN2653	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	12, 40	
	Benzyltrimethylamine	8	UN2619	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40, 48	
	Benzylidene chloride	6.1	UN1886	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40	
	Beryllium compounds, n.o.s.	6.1	UN1566	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		
	Beryllium nitrate	5.1	UN2464	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A		
	Beryllium, powder	6.1	UN1567	II	6.1, 4.1	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	A		
	Bicyclo [2,2,1] hepta-2,5-diene, stabilized or 2,5-Norbornadiene, stabilized	3	UN2251	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	D		
	Biphenyl triazone	Forbidden	UN2782	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E		
	Bipyridium pesticides, liquid, flammable, toxic, flash point less than 23 degrees C			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40	
	Bipyridium pesticides, liquid, toxic	6.1	UN3016	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40	
	Bipyridium pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3015	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	21, 40	
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	21, 40	
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	21, 40	
	Bipyridium pesticides, solid, toxic	6.1	UN2781	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40	
	Bis (Aminopropyl) piperazine, see Corrosive liquid, n.o.s.													
	Bisulfate, aqueous solution	8	UN2837	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A		
				III	8	A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A		
	Bisulfites, aqueous solutions, n.o.s.	8	UN2693	III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52	
	Black powder, compressed or Gunpowder, compressed or Black powder, in pellets or Gunpowder, in pellets.	1.1D	UN0028	II	1.1D		None	62	None	Forbidden	Forbidden	10		
	Black powder or Gunpowder, granular or as a meal	1.1D	UN0027	II	1.1D	70	None	62	None	Forbidden	Forbidden	10		
	Black powder for small arms	4.1	NA0027	I	4.1		None	170	None	Forbidden	Forbidden	E		
	Blasting agent, n.o.s., see Explosives, blasting etc.													
	Blasting cap assemblies, see Detonator assemblies, non-electric, for Blasting													
	Blasting caps, electric, see Detonators, electric for blasting													
	Blasting caps, non-electric, see Detonators, non-electric, for blasting													
	Bleaching powder, see Calcium hypochlorite mixtures, etc.													
	Blue asbestos (Crocidolite) or Brown asbestos (amosite, myosrite)	9	UN2212	II	9	156, IB8, IP2, IP4, T3, TP33	155	216	240	Forbidden	Forbidden	A	34, 40	
	Bombs, photo-flash	1.1F	UN0037	II	1.1F			62	None	Forbidden	Forbidden	08		
	Bombs, photo-flash	1.1D	UN0038	II	1.1D			62	None	Forbidden	Forbidden	03		

Bombs, photo-flash	UN0039	1.2G ..	II	1.2G ..	62	None ..	Forbidden	Forbidden	03	.....
Bombs, photo-flash	UN0299	1.3G ..	II	1.3G ..	62	None ..	Forbidden	Forbidden	03	.....
Bombs, smoke, non-explosive, with corrosive liquid, without initiating device	8 UN2028	8	II	8	None ..	None ..	Forbidden	50 kg	E	40
Bombs, with bursting charge	UN0033	1.1F ..	II	1.1F ..	62	None ..	Forbidden	Forbidden	08	.....
Bombs, with bursting charge	UN0034	1.1D ..	II	1.1D ..	62	None ..	Forbidden	Forbidden	03	.....
Bombs, with bursting charge	UN0035	1.2D ..	II	1.2D ..	62	None ..	Forbidden	Forbidden	03	.....
Bombs, with bursting charge	UN0291	1.2F ..	II	1.2F ..	62	None ..	Forbidden	Forbidden	08	.....
Bombs with flammable liquid, with bursting charge	1.1J UN0399	1.1J ..	II	1.1J ..	62	None ..	Forbidden	Forbidden	04	23E
Bombs with flammable liquid, with bursting charge	UN0400	1.2J ..	II	1.2J ..	62	None ..	Forbidden	Forbidden	04	23E
Boosters with detonator	UN0225	1.1B ..	II	1.1B ..	62	None ..	Forbidden	Forbidden	11	.....
Boosters with detonator	UN0268	1.2B ..	II	1.2B ..	62	None ..	Forbidden	Forbidden	07	.....
Boosters, without detonator	UN0042	1.1D ..	II	1.1D ..	62	None ..	Forbidden	Forbidden	07	.....
Boosters, without detonator	UN0283	1.2D ..	II	1.2D ..	62	None ..	Forbidden	Forbidden	07	.....
Borate and chlorate mixtures, see Chlorate and borate mixtures .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Borneol	UN1312	4.1	III	4.1	213	240 .....	.....	100 kg	A	.....
Boron tribromide	8 UN2692	8	I	8, 6.1	227	244	Forbidden	Forbidden	C	12
Boron trichloride	UN1741	2.3 .....	.....	2.3, 8	304	314	Forbidden	Forbidden	D	25, 40
Boron trifluoride	UN1008	2.3 .....	.....	2.3	302	314, 315	Forbidden	Forbidden	D	40
Boron trifluoride acetic acid complex, liquid	UN1742	8	II	8	154	242	1 L	30 L	A	.....
Boron trifluoride acetic acid complex, solid	UN3419	8	II	8	154	240	15 kg	50 kg	A	.....
Boron trifluoride diethyl etherate	UN2604	8	I	8, 3	None ..	243	0.5 L	2.5 L	D	40
Boron trifluoride dihydrate	UN2851	8	II	8	154	240	15 kg	50 kg	B	12, 40,
Boron trifluoride dimethyl etherate	4.3 UN2965	4.3	I	4.3, 8, 3	None ..	243	Forbidden	1 L	D	21, 28,
Boron trifluoride propionic acid complex, liquid	UN1743	8	II	8	154	242	1 L	30 L	A	40, 49,
Boron trifluoride propionic acid complex, solid	UN3420	8	II	8	154	240	15 kg	50 kg	A	100
Box toe gum, see Nitrocellulose etc .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bromates, inorganic, aqueous solution, n.o.s.	UN3213	5.1	II	5.1	152	242	1 L	5 L	B	56, 58,
Bromates, inorganic, n.o.s.	UN1450	5.1	II	5.1	152	242	2.5 L	30 L	B	133
Bromine azide .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bromine or Bromine solutions	UN1744	Forbidden	I	8, 6.1	None ..	226	Forbidden	Forbidden	.....	12, 40,
Bromine chloride	UN2901	2.3 .....	.....	2.3, 8, 5.1	None ..	249	Forbidden	Forbidden	.....	66, 74,
Bromine pentafluoride	UN1745	5.1	I	5.1, 6.1, 8	None ..	228	Forbidden	Forbidden	D	89, 90
Bromine trifluoride	UN1746	5.1	I	5.1, 6.1, 8	None ..	228	Forbidden	Forbidden	D	40, 89,
4-Bromo-1,2-dinitrobenzene .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90
4-Bromo-1,2-dinitrobenzene (unstable at 50 degrees C)	UN2688	6.1	III	6.1	153	241	60 L	220 L	A	25, 40,
1-Bromo-3-chloropropane	UN2341	3	III	3	150	242	60 L	220 L	A	66, 90
1-Bromo-3-methylbutane .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1-Bromo-3-nitrobenzene (unstable at 56 degrees C)	UN3241	4.1	III	4.1	151	213	25 kg	50 kg	C	12, 25,
2-Bromo-2-nitropropane-1,3-diol .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
Bromoacetic acid, solid	UN3425	8	II	8	154	240	15 kg	50 kg	A	.....
Bromoacetic acid solution	UN1938	8	II	8	154	242	1 L	30 L	A	40
Bromoacetone	UN1569	6.1	III	6.1, 3	154	241	5 L	60 L	A	40
.....	.....	.....	II	.....	None ..	245	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(3)	Hazard class or Division	(4)	PG	(5)	(6)	(7)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
									Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	(10C)	(10D)
	Bromoacetyl bromide	8	UN2513	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40, 53		
	Bromobenzene	3	UN2514	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	12, 40, 52		
	Bromobenzyl cyanides, liquid	6.1	UN1694	I	6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	D	12, 40, 52		
	Bromobenzyl cyanides, solid	6.1	UN3449	I	6.1	T6, TP33	None	211	242	5 kg	50 kg	D	12, 40, 52		
	1-Bromobutane	3	UN1126	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	2-Bromobutane	3	UN2339	III	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	Bromochloromethane	6.1	UN1887	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40		
	2-Bromoethyl ethyl ether	3	UN2340	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	Bromoform	6.1	UN2515	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12, 40		
	Bromomethylpropanes	3	UN2342	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	2-Bromopentane	3	UN2343	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	Bromopropanes	3	UN2344	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40		
	3-Bromopropyne	3	UN2345	III	3	IB3, T2, TP1	150	203	242	5 L	60 L	D	40		
	Bromosilane	Forbidden													
	Bromotoluene-alpha, see Benzyl bromide														
	Bromotrifluoroethylene	2.1	UN2419	.....	2.1		None	304	314	Forbidden	150 kg	B	40		
	Bromotrifluoromethane or Refrigerant gas, R 13B1.	2.2	UN1009	.....	2.2	T50	306	304	314	75 kg	150 kg	A	.....		
	Brucine	6.1	UN1570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	.....		
	Busters, explosive	1.1D	UN0043	II	1.1D	T50	None	62	None	Forbidden	Forbidden	07	.....		
	Butadienes, stabilized or Butadienes and Hydrocarbon mixture, stabilized containing more than 40% butadienes.	2.1	UN1010	.....	2.1		306	304	314	Forbidden	150 kg	B	40		
	Butane see also Petroleum gases, liquefied	2.1	UN1011	.....	2.1	T19, T50	306	304	314	Forbidden	150 kg	E	40		
	Butane, butane mixtures and mixtures having similar properties in cartridges each not exceeding 500 grams, see Receptacles, etc.														
	Butanediol	3	UN2346	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....		
	1,2,4-Butanetriol trinitrate	Forbidden													
	Butanols	3	UN1120	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....		
	tert-Butoxycarbonyl azide	Forbidden													
	Butyl acetates	3	UN1123	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....		
	Butyl acid phosphate	8	UN1718	III	8	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....		
	Butyl acrylates, stabilized	3	UN2348	III	3	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....		
	Butyl alcohols, see Butanols														
	Butyl benzenes	3	UN2709	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....		
	n-Butyl bromide, see 1-Bromobutane														
	n-Butyl chloride, see Chlorobutanes														
	sec-Butyl chloroformate	6.1	NA2742	I	6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	1 L	30 L	A	12, 13, 22, 25, 40, 48, 100		
	n-Butyl chloroformate	6.1	UN2743	I	6.1, 8, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 13, 21, 25, 40, 100		
	Butyl ethers, see Dibutyl ethers														
	Butyl ethyl ether, see Ethyl butyl ether														
	n-Butyl formate	3	UN1128	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....		
	tert-Butyl hydroperoxide, with more than 90 percent with water	Forbidden													
	tert-Butyl hypochlorite	4.2	UN2355	I	4.2, 8	IB2, T7, TP2	None	211	243	Forbidden	Forbidden	D	.....		
	n-Butyl imidazole	6.1	UN2690	II	6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP45	153	202	243	5 L	60 L	A	.....		
	tert-Butyl isocyanate	6.1	UN2484	I	6.1, 3		None	226	244	Forbidden	Forbidden	D	40		

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n-Butyl isocyanate	6.1	UN2485	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	D	40
Butyl mercaptans	3	UN2347	II	3	A3, A6, IB2, T4, TP1	150	202	242	5 L	60 L D	52, 95
n-Butyl methacrylate, stabilized	3	UN2227	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	
Butyl methyl ether	3	UN2350	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	
Butyl nitrites	3	UN2351	I	3	T11, TP1, IP8, TP27	150	201	243	1 L	30 L E	40
			II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	40
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	40
tert-Butyl peroxoacetate, with more than 76 percent in solution	Forbidden										
n-Butyl peroxydicarbonate, with more than 52 percent in solution	Forbidden										
tert-Butyl peroxyisobutyrate, with more than 77 percent in solution	Forbidden										
Butyl phosphoric acid, see Butyl acid phosphate											
Butyl propionates	3	UN1914	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	D12,
5-tert-Butyl-2,4,6-trinitro-m-xylene or Musk xylene	4.1	UN2956	III	4.1	159	None	223	None	Forbidden	Forbidden D	25, 48, 127
			II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	40
			II	3, 8	IB2, T7, TP1	150	202	242	1 L	5 L B	40
n-Butylamine	3	UN1125	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	40
N-Butylaniline	6.1	UN2738	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L A	74
tert-Butylcyclohexylchloroformate	6.1	UN2747	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L A	12, 13, 25
											40
Butylene see also Petroleum gases, liquefied	2.1	UN1012		2.1	19, T50	306	304	314, 315.	Forbidden	150 kg E	
			II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	40
1,2-Butylene oxide, stabilized	3	UN3022	II	3	IB3, T4, TP1	153	203	241	60 L	220 L A	27, 49
Butyltoluenes	6.1	UN2667	III	6.1	A7, B2, B6, IB2, N34, T7, TP2,	None	202	243	Forbidden	30 L C	40
Butyltrichlorosilane	8	UN1747	II	8, 3							
1,4-Butynediol	6.1	UN2716	III	6.1	A1, IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg A	52, 53, 70, 139, 140
Butyraldehyde	3	UN1129	II	3	IB2, T4, TP1	150	202	242	5 L	60 L B	
Butyraldoxime	3	UN2840	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	
Butyric acid	8	UN2820	III	8	IB3, T4, TP1	154	203	241	5 L	60 L A	12
Butyric anhydride	8	UN2739	III	8	IB3, T4, TP1	154	203	241	5 L	60 L A	
Butyronitrile	3	UN2411	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L E	40
Butyryl chloride	3	UN2353	II	3, 8	IB2, T8, TP2, TP12, TP13	150	202	243	1 L	5 L C	40
Cacodylic acid	6.1	UN1572	II	6.1	IB8, IP2, IP4,T3, TP33	153	212	242	25 kg	100 kg E	52
Cadmium compounds	6.1	UN2570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg A	
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg A	
Caesium hydroxide	8	UN2682	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg A	29
Caesium hydroxide solution	8	UN2681	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L A	29
Calcium	4.3	UN1401	III	8	IB3, T4, TP1	154	203	241	5 L	60 L A	29
			II	4.3	IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg E	52
Calcium arsenate	6.1	UN1573	II	6.1	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg A	
Calcium arsenate and calcium arsenite, mixtures, solid	6.1	UN1574	II	6.1	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg A	
Calcium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.											
Calcium carbide	4.3	UN1402	I	4.3	A1, A8, B55, B59, IB4, IP1, N34, T9, TP7, TP33	None	211	242	Forbidden	15 kg B	52
			II	4.3	A1, A8, B55, B59, IB7, IP2, N34, T3, TP33	151	212	241	15 kg	50 kg B	52
Calcium chlorate	5.1	UN1452	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg A	56, 58
Calcium chlorate aqueous solution	5.1	UN2429	II	5.1	A2, IB2, N41, T4, TP1	152	202	242	1 L	5 L B	56, 58, 133

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)				(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk		Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)		(9A)	(9B)	(10A)	(10B)
	Calcium chloride			III	5.1	A2, IB2, N41, T4, TP1	152	203	241		2.5 L	30 L	B	56, 68, 133
	Calcium cyanamide with more than 0.1 percent of calcium carbide	5.1	UN1453	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242		5 kg	25 kg	A	56, 58
	Calcium cyanide	4.3	UN1403	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241		25 kg	100 kg	A	52
	Calcium dithionite or Calcium hydrosulfite	6.1	UN1575	I	6.1	IB7, IP1, N79, N80, T6, TP33	None ...	211	242		5 kg	50 kg	A	40, 52
	Calcium hydride	4.2	UN1923	II	4.2	A19, A20, IB6, IP2, T3, TP33	None ...	212	241		15 kg	50 kg	E	13
	Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry with more than 39 percent avail- able chlorine (8.8 percent available oxygen)	4.3	UN1404	I	4.3	A19, N40	None ...	211	242		Forbidden	15 kg	E	52
	Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 percent but not more than 16 percent water.	5.1	UN1748	II	5.1	165, 166, A7, A9, IB8, IP2, IP4, IP13, N34, W9	152	212	None ...		5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.			III	5.1	165, 171, A7, A9, IB8, IP4, IP13, N34, W9	152	213	240		25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.			III	5.1	165, 166, IB8, IP2, IP4, IP13, W9	152	212	240		5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.			III	5.1	165, 171, IB8, IP4, IP13, W9	152	213	240		25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.			III	5.1	165, A1, A29, IB8, IP3, IP13, N34, W9	152	213	240		25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
	Calcium manganese silicon	4.3	UN2844	III	4.3	A1, A19, IB8, IP2, IP4, T1, TP33	151	213	241		25 kg	100 kg	A	56, 58, 138
	Calcium nitrate	5.1	UN1454	III	5.1	34, IB8, IP3, T1, TP33	152	213	240		25 kg	100 kg	A	56, 58, 138
	Calcium oxide	8	UN1910	III	8	IB8, IP3, T1, TP33	154	213	240		25 kg	100 kg	A	56, 58, 138
	Calcium perchlorate	5.1	UN1455	II	5.1	IB6, IP2, T3, TP33	152	212	242		5 kg	25 kg	A	56, 58, 138
	Calcium permanganate	5.1	UN1456	II	5.1	IB6, IP2, T3, TP33	152	212	242		5 kg	25 kg	D	56, 58, 138
	Calcium peroxide	5.1	UN1457	II	5.1	IB6, IP2, T3, TP33	152	212	242		5 kg	25 kg	A	56, 58, 138
	Calcium phosphide	4.3	UN1360	I	4.3, 6.1.	A8, A19, N40	None ...	211	242		Forbidden	15 kg	E	56, 58, 138
	Calcium, pyrophoric or Calcium alloys, pyrophoric	4.2	UN1855	I	4.2	A1, A19, IB6, T1, TP33	None ...	187	None ...		Forbidden	Forbidden	D	56, 75, 40, 52, 85
	Calcium resinate	4.1	UN1313	III	4.1	A1, A19, IB4, T1, TP33	None ...	213	240		25 kg	100 kg	A	56, 58, 138
	Calcium resinate, fused	4.1	UN1314	III	4.1	A1, A19, IB4, T1, TP33	None ...	213	240		25 kg	100 kg	A	56, 58, 138
	Calcium selenate, see Selenates or Selenites			II	4.3	A19, IB7, IP2, T3, TP33	151	212	241		15 kg	50 kg	B	52, 85, 103
	Calcium silicide	4.3	UN1405	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241		25 kg	100 kg	B	52, 85, 103
	Camphor oil	3	UN1130	III	3	B1, IB3, T2, TP1	150	203	242		60 L	220 L	A	56, 58, 138
	Camphor, synthetic	4.1	UN2717	III	4.1	A1, IB8, IP3, T1, TP33	None ...	213	240		25 kg	100 kg	A	56, 58, 138
	Carbon primers, see Primers, tubular			III	8	IB3, T4, TP1	154	203	241		5 L	60 L	A	56, 58, 138
	Caproic acid	8	UN2829	III	8	T14, TP2, TP13, TP27	None ...	201	243		Forbidden	30 L	B	56, 58, 138
	Carbonyl chloride, see Carbonyl chloride			I	3, 6.1									
	Carbamate pesticides, liquid, flammable, toxic, flash point less than 23 degrees C			I	3, 6.1									

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			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	6.1	UN2992	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	6.1	UN2991	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	6.1	UN2757	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
			III	4.2	IB8, IP3, T1, TP33	None	213	241	0.5 kg	0.5 kg	A	12
	4.2	UN1362	II	4.2	IB6, T3, TP33	None	212	242	Forbidden	Forbidden	A	12
			III	4.2	IB8, IP3, T1, TP33	None	213	241	Forbidden	Forbidden	A	12
	2.2	UN1013		2.2		306	302, 304	302, 314, 315	75 kg	150 kg	A	
	2.2	UN1015		2.2		306	None	314, 315	75 kg	150 kg	A	
	2.2	UN1014		2.2, 5.1	77, A14	306	304	314, 315	75 kg	150 kg	A	
	2.2	UN2187		2.2	T75, TP5	306	304	314, 315	50 kg	500 kg	B	
A W	9	UN1845	III	None	B16, T14, TP2, TP7, TP13	217	217	240	200 kg	200 kg	C	40
	3	UN1131	I	3, 6.1		None	201	243	Forbidden	Forbidden	D	18, 40, 115
	2.3	UN1016		2.3, 2.1		None	302	314, 315	Forbidden	25 kg	D	40
	2.3	UN2600		2.3, 2.1		None	302	302	Forbidden	Forbidden	D	40, 57
	2.3	NA9202		2.3, 2.1	4, T75, TP5	None	316	318	Forbidden	Forbidden	D	
D	6.1	UN2516	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	25
	6.1	UN1846	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
	2.3	UN2417		2.3, 8		None	302	None	Forbidden	Forbidden	D	40
	2.3	UN2204		2.3, 2.1	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
	1.1G	UN0049	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	1.3G	UN0050	II	1.3G		None	62	None	Forbidden	75 kg	07	
	1.1C	UN0326	II	1.1C		None	62	None	Forbidden	Forbidden	07	
	1.2C	UN0413	II	1.2C		None	62	None	Forbidden	Forbidden	07	
	1.4S	UN0014	II	None		63	62	None	Forbidden	100 kg	05	
	1.3C	UN0327	II	1.3C		None	62	None	Forbidden	Forbidden	07	
	1.4C	UN0338	II	1.4C		None	62	None	Forbidden	75 kg	06	
	1.2C	UN0328	II	1.2C		None	62	None	Forbidden	Forbidden	03	
	1.4S	UN0012	II	None		63	62	None	Forbidden	100 kg	05	
	1.4C	UN0339	II	1.4C		None	62	None	Forbidden	75 kg	06	
	1.3C	UN0417	II	1.3C		None	62	None	Forbidden	Forbidden	08	
	1.1F	UN0005	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	1.1E	UN0006	II	1.1E		None	62	None	Forbidden	Forbidden	03	
	1.2F	UN0007	II	1.2F		None	62	None	Forbidden	Forbidden	08	
	1.2E	UN0321	II	1.2E		None	62	None	Forbidden	Forbidden	08	
	1.4F	UN0348	II	1.4F		None	62	None	Forbidden	Forbidden	08	
	1.4E	UN0412	II	1.4E		None	62	None	Forbidden	75 kg	02	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age			
							Excep- tions	Non- bulk	Bulk	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	Other	
D	Cartridges, oil well	1.3C	UN0277	II	1.3C ..	50	None	62	None	Forbidden	Forbidden	Forbidden	07		
	Cartridges, oil well	1.4C	UN0278	II	1.4C ..		None	62	None	None	Forbidden	75 kg	06		
	Cartridges, power device	1.3C	UN0275	II	1.3C ..		None	62	None	None	Forbidden	75 kg	07		
	Cartridges, power device	1.4C	UN0276	II	1.4C ..		None	62	None	None	Forbidden	75 kg	06		
	Cartridges, power device	1.4S	UN0323	II	1.4S ..		63	62	None	None	25 kg	100 kg	05		
	Cartridges, power device	1.2C	UN0381	II	1.2C ..		None	62	None	None	Forbidden	Forbidden	07		
	Cartridges for weapons, blank (UN 0014)														
	Cartridges, safety, see Cartridges for weapons, other than blank or Castor beans (UN 0323).														
	Cartridges, signal	1.3G	UN0054	II	1.3G ..		None	62	None	None	Forbidden	75 kg	07		
	Cartridges, signal	1.4G	UN0312	II	1.4G ..		None	62	None	None	Forbidden	75 kg	06		
D	Cartridges, signal	1.4S	UN0405	II	1.4S ..	50	63	62	None	30 kg gross	30 kg gross	30 kg gross	A		
	Cartridges, small arms	ORM-D			None		63	62	None	30 kg gross	30 kg gross	30 kg gross	A		
	Cartridges power device (used to project fastening devices)	ORM-D			None		63	62	None	30 kg gross	30 kg gross	30 kg gross	A		
	Cartridges, sporting, see Cartridges for weapons, other than blank														
	Cartridges, starter, jet engine, see Cartridges, power device														
	Cases, cartridge, empty with primer	1.4S	UN0055	II	1.4S ..		50	62	None	None	25 kg	100 kg	05		
	Cases, cartridges, empty with primer	1.4C	UN0379	II	1.4C ..		50	62	None	None	Forbidden	75 kg	06		
	Cases, combustible, empty, without primer	1.4C	UN0446	II	1.4C ..		62	62	None	None	Forbidden	75 kg	06		
	Cases, combustible, empty, without primer	1.3C	UN0447	II	1.3C ..		62	62	None	None	Forbidden	Forbidden	07		
	Castorhead gasoline see Gasoline														
A W	Castor beans or Castor meal or Castor pomace or Castor flake	9	UN2969	II	None	IB8, IP2, IP4, T3, TP33	155	204	240	No limit	No limit	E	34, 40		
	Caustic alkali liquids, n.o.s.	8	UN1719	II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	A	29		
G	.....			III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	29		
	Caustic potash, see Potassium hydroxide etc														
D	Caustic soda, (etc.) see Sodium hydroxide etc														
	Cells, containing sodium	4.3	UN3282	II	4.3	IB8, IP3	189	189	213	25 kg gross	No limit	A			
	Celluloid, in block, rods, rolls, sheets, tubes, etc, except scrap	4.1	UN2000	III	4.1		213	213	241	25 kg	100 kg	A			
	Celluloid, scrap	4.2	UN2002	III	4.2		None	213	241	Forbidden	Forbidden	D			
	Cement, see Adhesives containing flammable liquid														
	Cerium, slabs, ingots, or rods	4.1	UN1333	II	4.1	IB8, IP2, IP4, N34	None	212	240	15 kg	50 kg	A	74, 91		
	Cerium, turnings or gritty powder	4.3	UN3078	II	4.3	A1, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	52		
	Cesium or Caesium	4.3	UN1407	I	4.3	A7, A19, IB4, IP1, N34, N40	None	211	242	Forbidden	15 kg	D	52		
	Cesium nitrate or Caesium nitrate	5.1	UN1451	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A			
	D	Charcoal briquettes, shell, screenings, wood, etc.	4.2	NA1361	III	4.2	IB8, T1, TP33	151	213	240	25 kg	100 kg	A	12	
Charges, bursting, plastics bonded		1.1D	UN0457	II	1.1D ..		None	62	None	Forbidden	Forbidden	07			
Charges, bursting, plastics bonded		1.2D	UN0458	II	1.2D ..		None	62	None	Forbidden	75 kg	06			
Charges, bursting, plastics bonded		1.4D	UN0459	II	1.4D ..		None	62	None	Forbidden	75 kg	06			
Charges, bursting, plastics bonded		1.4S	UN0460	II	1.4S ..		None	62	None	25 kg	100 kg	05			
Charges, demolition		1.1D	UN0048	II	1.1D ..		None	62	None	Forbidden	Forbidden	03			
Charges, depth		1.1D	UN0056	II	1.1D ..		None	62	None	Forbidden	Forbidden	03			
Charges, expelling, explosive, for fire extinguishers, see Cartridges, power device															
Charges, explosive, commercial without detonator		1.1D	UN0442	II	1.1D ..		None	62	None	Forbidden	Forbidden	07			
Charges, explosive, commercial without detonator		1.2D	UN0443	II	1.2D ..		None	62	None	Forbidden	75 kg	06			
D	Charges, explosive, commercial without detonator	1.4D	UN0444	II	1.4D ..		None	62	None	Forbidden	100 kg	05			
	Charges, explosive, commercial without detonator	1.4S	UN0445	II	1.4S ..		None	62	None	25 kg	100 kg	05			
	Charges, explosive, commercial without detonator	1.1C	UN0271	II	1.1C ..		None	62	None	Forbidden	Forbidden	07			
	Charges, propelling	1.3C	UN0272	II	1.3C ..		None	62	None	Forbidden	Forbidden	07			
	Charges, propelling	1.2C	UN0415	II	1.2C ..		None	62	None	Forbidden	Forbidden	07			
	Charges, propelling	1.4C	UN0491	II	1.4C ..		None	62	None	Forbidden	75 kg	06			
	Charges, propelling, for cannon	1.3C	UN0242	II	1.3C ..		None	62	None	Forbidden	Forbidden	10			
	Charges, propelling, for cannon	1.1C	UN0279	II	1.1C ..		None	62	None	Forbidden	Forbidden	10			
	Charges, propelling, for cannon	1.2C	UN0414	II	1.2C ..		None	62	None	Forbidden	Forbidden	10			
	Charges, shaped, flexible, linear	1.4D	UN0237	II	1.4D ..		None	62	None	Forbidden	75 kg	06			
D	Charges, shaped, flexible, linear	1.1D	UN0288	II	1.1D ..	101	None	62	None	Forbidden	Forbidden	07			
	Charges, shaped, without detonator	1.1D	UN0059	II	1.1D ..		None	62	None	Forbidden	Forbidden	07			
	Charges, shaped, without detonator	1.2D	UN0439	II	1.2D ..		None	62	None	Forbidden	Forbidden	07			
	Charges, shaped, without detonator	1.4D	UN0440	II	1.4D ..		None	62	None	Forbidden	Forbidden	07			

D	Charges, shaped, <i>without detonator</i>	1.4S ...	UN0441	II	1.4S ...	None ...	62 ...	None ...	25 kg	100 kg	05	.....
	Charges, supplementary explosive	1.1D ..	UN0060	II	1.1D ..	None ...	62 ...	None ...	Forbidden	Forbidden	10	.....
	Chemical kit	8	NA1760	II	8	154 ...	161 ...	None ...	1 L	30 L	B	40
	Chemical kits	9	UN3316	.....	9	161 ...	161 ...	None ...	10 kg	10 kg	A	.....
	Chloral, anhydrous, stabilized	6.1	UN2075	II	6.1	153 ...	202 ...	243 ...	5 L	60 L	D	40
	Chlorate and borate mixtures	5.1	UN1458	II	5.1	152 ...	212 ...	240 ...	5 kg	25 kg	A	56, 58
	.....	.....	.....	III	5.1	152 ...	213 ...	240 ...	25 kg	100 kg	A	56, 58
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	II	5.1	152 ...	212 ...	240 ...	5 kg	25 kg	A	56, 58
	Chlorate and magnesium chloride mixture solution	5.1	UN3407	II	5.1	152 ...	202 ...	242 ...	1 L	5 L	A	56, 58, 133
	.....	.....	.....	III	5.1	152 ...	203 ...	241 ...	2.5 L	30 L	A	56, 58, 133
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	III	5.1	152 ...	213 ...	240 ...	25 kg	100 kg	A	56, 58
	<i>Chlorate of potash, see Potassium chlorate</i> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	<i>Chlorate of soda, see Sodium chlorate</i>	5.1	UN3210	II	5.1	152 ...	202 ...	242 ...	1 L	5 L	B	56, 58, 133
	Chlorates, inorganic, aqueous solution, n.o.s. ....	.....	.....	III	5.1	152 ...	203 ...	241 ...	2.5 L	30 L	B	56, 58, 133
	.....	.....	.....	II	5.1	152 ...	212 ...	242 ...	5 kg	25 kg	A	56, 58
	Chlorates, inorganic, n.o.s.	5.1	UN1461	II	5.1	None ...	229 ...	None ...	Forbidden	Forbidden	D	56, 58
	Chloric acid aqueous solution, <i>with not more than 10 percent chloric acid</i>	5.1	UN2626	II	5.1	.....	.....	.....	.....	.....	.....	.....
	<i>Chloride of phosphorus, see Phosphorus trichloride</i> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	<i>Chloride of sulfur, see Sulfur chloride</i> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	<i>Chlorinated lime, see Calcium hypochlorite mixtures, etc</i> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Chlorine	2.3	UN1017	.....	2.3, 8	None ...	304 ...	314, 315	Forbidden	Forbidden	D	40, 51, 55, 62, 68, 89, 90
												
D	<i>Chlorine azide</i>	Forbidden	NA9191	II	5.1, 6.1	None ...	229 ...	None ...	Forbidden	Forbidden	E	.....
	Chlorine dioxide, hydrate, frozen	5.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	<i>Chlorine dioxide (not hydrate)</i> .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Chlorine pentafluoride	2.3	UN2548	.....	2.3, 5.1, 8	None ...	304 ...	314	Forbidden	Forbidden	D	40, 89, 90
												
	Chlorine trifluoride	2.3	UN1749	.....	2.3, 5.1, 8	None ...	304 ...	314	Forbidden	Forbidden	D	40, 89, 90
												
	Chlorite solution	8	UN1908	II	8	154 ...	202 ...	242 ...	1 L	30 L	B	26, 44, 89, 100, 141
												
	.....	.....	.....	III	8	154 ...	203 ...	241 ...	5 L	60 L	B	26, 44, 89, 100, 141
	Chlorites, inorganic, n.o.s.	5.1	UN1462	II	5.1	152 ...	212 ...	242 ...	5 kg	25 kg	A	56, 58
	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b	2.1	UN2517	.....	2.1	306 ...	304 ...	314, 315	Forbidden	150 kg	B	40
												
	3-Chloro-4-methylphenyl isocyanate, liquid	6.1	UN2236	II	6.1	153 ...	202 ...	243 ...	5 L	60 L	B	40
	3-Chloro-4-methylphenyl isocyanate, solid	6.1	UN3428	II	6.1	153 ...	212 ...	242 ...	25 kg	100 kg	B	40
												
	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124	2.2	UN1021	.....	2.2	306 ...	304 ...	314, 315	75 kg	150 kg	A	.....
												
	4-Chloro-o-toluidine hydrochloride, solid	6.1	UN1579	III	6.1	153 ...	213 ...	240 ...	100 kg	200 kg	A	.....
												
	4-Chloro-o-toluidine hydrochloride, solution	6.1	UN3410	III	6.1	153 ...	203 ...	241 ...	60 L	220 L	A	.....
	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a	2.2	UN1983	.....	2.2	306 ...	304 ...	314, 315	75 kg	150 kg	A	.....
												
	Chloroacetic acid, molten	6.1	UN3250	II	6.1, 8	None ...	202 ...	243 ...	Forbidden	Forbidden	C	40
												
	Chloroacetic acid, solid	6.1	UN1751	II	6.1, 8	153 ...	212 ...	242 ...	15 kg	50 kg	A	40
												
	Chloroacetic acid, solution	6.1	UN1750	II	6.1, 8	153 ...	202 ...	243 ...	1 L	30 L	C	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Chloroacetone, stabilized	6.1	UN1695	I	6.1, 3, 8.	2, B9, B14, B32, B74, N12, N32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
+	Chloroacetone (<i>unstabilized</i>)	Forbidden 6.1	UN2668	II	6.1, 3	2, B9, B14, B32, B74, IB99, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40, 52
	Chloroacetonitrile						None	202	243	Forbidden	60 L	D	12, 40
	Chloroacetophenone, liquid CN	6.1	UN3416	II	6.1	A3, IB2, N12, N32, N33, T7, TP2, TP13	None	212	None	Forbidden	100 kg	D	12, 40
	Chloroacetophenone, solid (CN)	6.1	UN1697	II	6.1	A3, IB8, IP2, IP4, N12, N32, N33, N34, T3, TP33, TP2, TP13	None	227	244	Forbidden	Forbidden	D	40
	Chloroacetyl chloride	6.1	UN1752	I	6.1, 8	2, B3, B8, B9, B14, B32, B74, B77, N34, N43, T20, TP2, TP13, TP38, TP45	None	202	243	5 L	60 L	A	52
	Chloroanilines, liquid	6.1	UN2019	II	6.1	IB2, T7, TP2	153	202	243	25 kg	100 kg	A	52
	Chloroanilines, solid	6.1	UN2018	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Chloroanisidines	6.1	UN2233	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Chlorobenzene	3	UN1134	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Chlorobenzol, see Chlorobenzene												
	Chlorobenzotrifluorides	3	UN2234	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Chlorobenzyl chlorides, liquid	6.1	UN2235	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
	Chlorobenzyl chlorides, solid	6.1	UN3427	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Chlorobutanes	3	UN1127	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	12
	Chlorocresols solution	6.1	UN2669	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12
	Chlorocresols, solid	6.1	UN3437	II	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	A	12
	Chlorodifluorobromomethane or Refrigerant gas R 12B1	2.2	UN1974		2.2	IB8, IP2, IP4, T3, TP33	306	304	314	75 kg	150 kg	A	40
	Chlorodifluoromethane and chloropentafluoroethane mixture or Refrigerant gas R 502 with fixed boiling point, with approximately 49 percent chlorodifluoromethane.	2.2	UN1973		2.2	IB8, IP2, IP4, T3, TP33	306	304	314	75 kg	150 kg	A	40
	Chlorodifluoromethane or Refrigerant gas R 22	2.2	UN1018		2.2	IB8, IP2, IP4, T3, TP33	306	304	314	75 kg	150 kg	A	40
+	Chlorodinitrobenzenes, liquid	6.1	UN1577	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	91
	Chlorodinitro-benzenes, solid	6.1	UN3441	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
	2-Chloroethanal	6.1	UN2232	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloroform	6.1	UN1888	III	6.1	IB3, N36, T7, TP2	153	203	241	60 L	220 L	A	40
G	Chloroformates, toxic, corrosive, flammable, n.o.s.	6.1	UN2742	II	6.1, 8, 3.	5, IB1, T7, TP2	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
G	Chloroformates, toxic, corrosive, n.o.s.	6.1	UN3277	II	6.1, 8	IB2, T8, TP2, TP13, TP28	153	202	243	1 L	30 L	A	12, 13, 25, 40
	Chloromethyl chloroformate	6.1	UN2745	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	Chloromethyl ethyl ether	3	UN2354	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Chloronitroanilines	6.1	UN2237	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
+	Chloronitrobenzene, liquid ortho	6.1	UN3409	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40

+	Chloronitrobenzenes, solid <i>meta</i> or <i>para</i>	6.1	UN1578	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Chloronitrotoluenes, liquid	6.1	UN2433	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	44, 89, 100, 141
	Chloronitrotoluenes, solid	6.1	UN3457	III	6.1	IB8, IP3, T1, TP33	153	213	240	25 kg	200 kg	A	.....
	Chloropentafluoroethane or Refrigerant gas R 115	2.2	UN1020	.....	2.2	T50	306	304	314, 315	75 kg	150 kg	A	.....
	Chlorophenolates, liquid or Phenolates, liquid	8	UN2904	III	8	IB3	154	203	241	5 L	60 L	A	.....
	Chlorophenolates, solid or Phenolates, solid	8	UN2905	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
	Chlorophenols, liquid	6.1	UN2021	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Chlorophenols, solid	6.1	UN2020	III	6.1	IB8, IP3, T1, TP1, TP33	153	213	240	100 kg	200 kg	A	.....
	Chlorophenyltrichlorosilane	8	UN1753	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
+	Chloropicrin	6.1	UN1580	I	6.1	2, B7, B9, B14, B32, B46, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloropicrin and methyl bromide mixtures	2.3	UN1581	.....	2.3	2, B9, B14, T50	None	193	314, 315	Forbidden	Forbidden	D	25, 40
	Chloropicrin and methyl chloride mixtures	2.3	UN1582	.....	2.3	2, T50	None	193	245	Forbidden	Forbidden	D	25, 40
	Chloropicrin mixture, flammable (pressure not exceeding 14.7 psia at 115 degrees F flash point below 100 degrees F) see Toxic liquids, flammable, etc.	6.1	UN1583	I	6.1	5	None	201	243	Forbidden	Forbidden	C	40
	Chloropicrin mixtures, n.o.s. ....	.....	.....	II	6.1	IB2	153	202	243	Forbidden	Forbidden	C	40
	Chloropicrin mixtures, n.o.s. ....	.....	.....	III	6.1	IB3	153	203	241	Forbidden	Forbidden	C	40
D	Chloropivaloyl chloride	6.1	NA9263	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	Chloroplatinic acid, solid	8	UN2507	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
	Chloroprene, stabilized	3	UN1991	I	3, 6.1	B57, T14, TP2, TP13	None	201	243	Forbidden	30 L	D	40
	Chloroprene, uninhibited	Forbidden	.....	II	3	IB2, IP8, N34, T7, TP2	None	202	242	Forbidden	.....	E	.....
	1-Chloropropane	3	UN2356	I	3	N36, T11, TP2, TP13	150	201	243	1 L	30 L	E	.....
	2-Chloropropane	6.1	UN2849	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	3-Chloropropanol-1	3	UN2456	I	3	A3, N36, T11, TP2	150	201	243	1 L	30 L	E	.....
	2-Chloropropionic acid	8	UN2511	III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	8
	2-Chloropyridine	6.1	UN2822	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Chlorosilanes, corrosive, flammable, n.o.s.	8	UN2986	II	8, 3	IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	40
	Chlorosilanes, corrosive, n.o.s.	8	UN2987	II	8	B2, IB2, T14, TP2, TP27	154	202	242	1 L	30 L	C	40
	Chlorosilanes, flammable, corrosive, n.o.s.	3	UN2985	II	3, 8	IB1, T11, TP2, TP13, TP27	150	201	243	1 L	5 L	B	40
	Chlorosilanes, toxic, corrosive, n.o.s.	6.1	UN3361	II	6.1, 8	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40
	Chlorosilanes, toxic, corrosive, flammable, n.o.s.	6.1	UN3362	II	6.1, 3, 8	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40, 125
	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	4.3	UN2988	I	4.3, 3, 8	A2, T10, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100
+	Chlorosulfonic acid (with or without sulfur trioxide)	8	UN1754	I	8, 6.1	2, B9, B10, B14, B32, B74, T20, TP2, TP12, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Chlorotoluenes	3	UN2238	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Chlorotoluidines, liquid	6.1	UN3429	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Chlorotoluidines, solid	6.1	UN2239	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Chlorotrifluoromethane and trifluoromethane azeotropic mixture or Refrigerant gas R 503 with approximately 60 percent chlorotrifluoromethane.	2.2	UN2599	.....	2.2	.....	306	304	314, 315	75 kg	150 kg	A	.....
	Chlorotrifluoromethane or Refrigerant gas R 13	2.2	UN1022	.....	2.2	.....	306	304	314, 315	75 kg	150 kg	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(2)	Hazard class or Division	Identifi-cation Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		(10) Vessel stow-age	
								Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)			(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)		(9A)	(9B)	(10A)	(10B)
	Chromic acid solution		8	UN1755	II	8	B2, IB2, T8, TP2, TP12	154	202	242	.....	1 L	30 L	C	40, 44, 89, 100, 141
	Chromic anhydride, see Chromium trioxide, anhydrous														
	Chromic fluoride, solid		8	UN1756	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	.....	15 kg	50 kg	A	52
	Chromic fluoride, solution		8	UN1757	II	8	B2, IB2, T7, TP2	154	202	242	.....	1 L	30 L	A	.....
	Chromium nitrate		5.1	UN2720	III	8	IB3, T4, TP1	154	203	241	.....	5 L	60 L	A	.....
							A1, A29, IB8, IP3, T1, TP33	152	213	240	.....	25 kg	100 kg	A	.....
	Chromium oxychloride		8	UN1758	I	8	A3, A6, A7, B10, N34, T10, TP2, TP12	None	201	243	.....	0.5 L	2.5 L	C	40, 66, 74, 89, 90
	Chromium trioxide, anhydrous		5.1	UN1463	II	5.1, 8	IB8, IP4, T3, TP33	None	212	242	.....	5 kg	25 kg	A	.....
	Chromosulfuric acid		8	UN2240	I	8	A3, A6, A7, B4, B6, N34, T10, TP2, TP12, TP13	None	201	243	.....	0.5 L	2.5 L	B	40, 66, 74, 89, 90
	Chromyl chloride, see Chromium oxychloride														
	Cigar and cigarette lighters, charged with fuel, see Lighters or Lighter refills containing flammable gas.														
	Coal briquettes, hot														
	Coal gas, compressed		Forbidden	UN1023	.....	2.3, 2.1	3	None	302	314, 315	.....	Forbidden	Forbidden	D	40
	Coal tar distillates, flammable		3	UN1136	II	3	IB2, T4, TP1	150	202	242	.....	5 L	60 L	B	.....
					III	3	B1, IB3, T4, TP1, TP29	150	203	242	.....	60 L	220 L	A	.....
	Coal tar dye, corrosive, liquid, n.o.s. see Dyes, liquid or solid, n.o.s. or Dye intermediates, liquid or solid, corrosive, n.o.s.														
	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)														
					I	3	T11, TP1, TP8, TP27	150	201	243	.....	1 L	30 L	E	.....
					II	3	149, IB2, T4, TP1, TP8	150	202	242	.....	5 L	60 L	B	.....
	Cobalt naphthenates, powder			UN2001	III	3	B1, IB3, T2, TP1	150	203	242	.....	60 L	220 L	A	.....
			4.1		III	4.1	A19, IB8, IP3, T1, TP33	151	213	240	.....	25 kg	100 kg	A	.....
	Cobalt resinates, precipitated		4.1	UN1318	III	4.1	A1, A19, IB6, T1, TP33	151	213	240	.....	25 kg	100 kg	A	.....
	Coke, hot														
	Collision, see Nitrocellulose etc.														
D G	Combustible liquid, n.o.s.			NA1993	III	None	IB3, T1, T4, TP1	150	203	241	.....	60 L	220 L	A	.....
G	Components, explosive train, n.o.s.		1.2B	UN0382	II	1.2B	101	None	62	None	.....	Forbidden	Forbidden	11	.....
G	Components, explosive train, n.o.s.		1.4B	UN0383	II	1.4B	101	None	62	None	.....	Forbidden	Forbidden	06	.....
G	Components, explosive train, n.o.s.		1.4S	UN0384	II	1.4S	101	None	62	None	.....	Forbidden	Forbidden	05	.....
G	Components, explosive train, n.o.s.		1.1B	UN0461	II	1.1B	101	None	62	None	.....	Forbidden	Forbidden	11	.....
	Composition B, see Hexolite, etc.														
D G	Compounds, cleaning liquid		8	NA1760	I	8	A7, B10, T14, TP2, TP27	None	201	243	.....	0.5 L	2.5 L	B	40
					II	8	B2, IB2, N37, T11, TP2, TP27	154	202	242	.....	1 L	30 L	B	40
					III	8	IB3, N37, T7, TP1, TP28	154	203	241	.....	5 L	60 L	A	40
D G	Compounds, cleaning liquid		3	NA1993	I	3	T11, TP1	150	201	243	.....	1 L	30 L	E	.....
					II	3	IB2, T7, TP1, TP8, TP28	150	202	242	.....	5 L	60 L	B	.....
					III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	.....	60 L	220 L	A	.....
D G	Compounds, tree killing, liquid or Compounds, weed killing, liquid		8	NA1760	I	8	A7, B10, T14, TP2, TP27	None	201	243	.....	0.5 L	2.5 L	B	40

				II	8	B2, IB2, N37, T11, TP2, TP27 IB3, N37, T7, TP1, TP28 T11, TP1 IB2, T7, TP1, TP8, TP28 B1, B52, IB3, T4, TP1, TP29 T14, TP2, TP13, TP27 IB2, T11, TP2, TP27 IB3, T7, TP1, TP28	154	202	242	1 L	30 L	B	40
				III	8		154	203	241	5 L	60 L	A	40
D G	Compounds, tree killing, liquid or Compounds, weed killing, liquid	3	NA1933	I	3		150	201	243	1 L	30 L	E	
				II	3		150	202	242	5 L	60 L	B	
				III	3		150	203	242	60 L	220 L	A	
D G	Compounds, tree killing, liquid or Compounds, weed killing, liquid	6.1	NA2810	I	6.1		None	201	243	1 L	30 L	B	40
				II	6.1		153	202	243	5 L	60 L	B	40
				III	6.1		153	203	241	60 L	220 L	A	40
G	Compressed gas, flammable, n.o.s.	2.1	UN1954		2.1		306	302	314, 315	Forbidden	150 kg	D	40
G	Compressed gas, n.o.s.	2.2	UN1956		2.2		306	302	314, 315	75 kg	150 kg	A	
G	Compressed gas, oxidizing, n.o.s.	2.2	UN3156		2.2		307	305	315	75 kg	150 kg	D	
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3304		2.3		306	302	314, 315	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3304		2.3		None	192	245	Forbidden	Forbidden	D	40
					2.3		None	302	314	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3304		2.3		None	305	315	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3304		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3305		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3305		2.3		None	305	315	Forbidden	Forbidden	D	17, 40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3305		2.3		None	192	245	Forbidden	Forbidden	D	17, 40
G I	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3305		2.3		None	302	314, 315	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation hazard Zone A	2.3	UN1953		2.3		None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation hazard Zone B	2.3	UN1953		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C	2.3	UN1953		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D	2.3	UN1953		2.3		None	305	315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone A	2.3	UN1955		2.3		None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone B	2.3	UN1955		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone C	2.3	UN1955		2.3		None	305	315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone D	2.3	UN1955		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3306		2.3		None	302	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3306		2.3		None	305	315	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3306		2.3		None	302	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3306		2.3		None	305	315	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone A	2.3	UN3303		2.3		None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone B	2.3	UN3303		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone C	2.3	UN3303		2.3		None	302	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone D	2.3	UN3303		2.3		None	305	315	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(1)	(2)	(3)	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)				(9) Quantity limitations		(10) Vessel stow-age	
										Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	(10A)	(10B)
D	Consumer commodity				ORM-D					156, 306, None	156, 306, 62	None	30 kg gross	30 kg gross	A		
	Contrivances, water-activated, with bursier, expelling charge or propelling charge				1.2L	UN0248	II	1.2L	101	None	62	None	Forbidden	Forbidden	08		8E, 14E, 15E, 17E
	Contrivances, water-activated, with bursier, expelling charge or propelling charge				1.3L	UN0249	II	1.3L	101	None	62	None	Forbidden	Forbidden	08		8E, 14E, 15E, 17E
	Copper acetoarsenite				6.1	UN1585	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
	Copper acetylde				Forbidden												
	Copper amine azide				6.1	UN1586	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
	Copper arsenite				3	UN2776	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B		40
	Copper based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C						II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B		40
	Copper based pesticides, liquid, toxic				6.1	UN3010	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B		40
							II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B		40
							III	6.1	IB3, T7, TP2, TP13, TP27	153	203	241	60 L	220 L	A		40
	Copper based pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C				6.1	UN3009	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B		40
							II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B		40
							III	6.1, 3	B1, IB3, T7, TP2, TP13, TP27	153	203	242	60 L	220 L	A		40
A W	Copper based pesticides, solid, toxic				6.1	UN2775	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A		40
							II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		40
							III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		40
	Copper chlorate				5.1	UN2721	II	5.1	A1, IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A		56, 58
	Copper chloride				8	UN2802	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A		
	Copper cyanide				6.1	UN1587	II	6.1	IB8, IP2, IP4, T3, TP33	153	204	242	25 kg	100 kg	A		52
	Copper selenate, see Selenates or Selenites																
	Copper selenite, see Selenates or Selenites																
	Copper tellurine nitrate				Forbidden												
	Copra				4.2	UN1363	III	4.2	IB8, IP3, IP7	None	213	241	Forbidden	Forbidden	A		13, 19, 48, 119
	Cord, detonating, flexible				1.1D	UN0065	II	1.1D	102	63(a)	62	None	Forbidden	Forbidden	07		
	Cord, detonating, flexible				1.4D	UN0289	II	1.4D		None	62	None	Forbidden	Forbidden	06		
	Cord, detonating or Fuse detonating metal clad				1.2D	UN0290	II	1.2D		None	62	None	Forbidden	Forbidden	07		
	Cord, detonating or Fuse, detonating metal clad				1.1D	UN0290	II	1.1D		None	62	None	Forbidden	Forbidden	07		
	Cord, detonating, mild effect or Fuse, detonating, mild effect metal clad				1.4D	UN0104	II	1.4D		None	62	None	Forbidden	Forbidden	06		
	Cord, igniter				1.4G	UN0066	II	1.4G		None	62	None	Forbidden	Forbidden	06		
G	Cordeau detonant fuse, see Cord, detonating, etc; Cord, detonating, flexible																
	Cordite, see Powder, smokeless																
	Corrosive liquid, acidic, inorganic, n.o.s.				8	UN3264	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B		40
							II	8	A6, B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B		40
G							III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A		40
	Corrosive liquid, acidic, organic, n.o.s.				8	UN3265	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B		40

				II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
G	Corrosive liquid, basic, inorganic, n.o.s.	8	UN3266	I	8	A6, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40, 52
				II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40, 52
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
G	Corrosive liquid, basic, organic, n.o.s.	8	UN3267	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40, 52
				II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40, 52
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
G	Corrosive liquid, self-heating, n.o.s.	8	UN3301	I	8, 4.2	A6, B10	None	201	243	0.5 L	2.5 L	D	.....
				II	8, 4.2	B2, IB1	154	202	242	1 L	30 L	D	.....
G	Corrosive liquids, flammable, n.o.s.	8	UN2920	I	8, 3	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	C	25, 40
				II	8, 3	B2, IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	25, 40
				I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
G	Corrosive liquids, n.o.s.	8	UN1760	II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
				I	8, 5.1	A6, A7	None	201	243	Forbidden	2.5 L	C	89
G	Corrosive liquids, oxidizing, n.o.s.	8	UN3093	II	8, 5.1	A6, A7, IB2	None	202	243	1 L	30 L	C	89
G	Corrosive liquids, toxic, n.o.s.	8	UN2922	I	8, 6.1	A7, A6, B10, T14, TP2, TP13	None	201	243	0.5 L	2.5 L	B	40
				II	8, 6.1	B3, IB2, T7, TP2	154	202	243	1 L	30 L	B	40
				III	8, 6.1	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	B	40
G	Corrosive liquids, water-reactive, n.o.s.	8	UN3094	I	8, 4.3	A6, A7	None	201	243	Forbidden	1 L	E	.....
G	Corrosive solid, acidic, inorganic, n.o.s.	8	UN3260	II	8, 4.3	A6, A7	None	202	243	1 L	5 L	E	.....
				I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	.....
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	.....
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
				I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
G	Corrosive solid, acidic, organic, n.o.s.	8	UN3261	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
				I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
G	Corrosive solid, basic, inorganic, n.o.s.	8	UN3262	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
				I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
G	Corrosive solid, basic, organic, n.o.s.	8	UN3263	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
				I	8, 4.1	IB6, T6, TP33	None	211	242	1 kg	25 kg	B	12, 25
G	Corrosive solids, flammable, n.o.s.	8	UN2921	II	8, 4.1	IB8, IP2, IP4, T3, TP33	None	212	242	15 kg	50 kg	B	12, 25
				I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	.....
G	Corrosive solids, n.o.s.	8	UN1759	II	8	128, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
				III	8	128, IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
				I	8, 5.1	T6, TP33	None	211	242	1 kg	25 kg	C	.....
G	Corrosive solids, oxidizing, n.o.s.	8	UN3084	II	8, 5.1	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Corrosive solids, self-heating, n.o.s.	8	UN3095	I	8, 4.2	T6, TP33	None	211	243	1 kg	25 kg	C	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)				(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
G	Corrosive solids, toxic, n.o.s.	8	UN2923	II	8, 4.2	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C		
				I	8, 6.1	IB7, T6, TP33	None	211	242	1 kg	25 kg	B	40	
				II	8, 6.1	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	40	
G				III	8, 6.1	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	B	40, 95	
	Corrosive solids, water-reactive, n.o.s.	8	UN3096	I	8, 4.3	IB4, IP1, T6, TP33	None	211	243	1 kg	25 kg	D		
				II	8, 4.3	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D		
D W	Cotton	9	NA1365		9	137, IB8, IP2, IP4, W41	None	None	None	No limit	No limit	A		
A W	Cotton waste, oily	4.2	UN1364	III	4.2	IB8, IP3, IP7	None	213	None	Forbidden	Forbidden	A	54	
A I W	Cotton, wet	4.2	UN1365	III	4.2	IB8, IP3, IP7	None	204	241	Forbidden	Forbidden	A		
	Coumarin derivative pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN3024	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	Forbidden	B	40	
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40	
	Coumarin derivative pesticides, liquid, toxic	6.1	UN3026	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40	
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40	
	Coumarin derivative pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3025	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
				III	6.1, 3	B1, IB3, T7, TP1, TP28	153	203	242	60 L	220 L	A	40	
	Coumarin derivative pesticides, solid, toxic	6.1	UN3027	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40	
	Cresols, liquid	6.1	UN2076	II	6.1, 8	IB2, IP2, IP4, T7, TP2	153	202	243	1 L	30 L	B		
	Cresols, solid	6.1	UN3455	II	6.1, 8	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	B		
	Cresylic acid	6.1	UN2022	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	B		
	Crotonaldehyde, stabilized	6.1	UN1143	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40	
	Crotonic acid, liquid	8	UN2823	III	8	IB8, T1	154	203	241	5 L	60 L	A	12	
	Crotonic acid, solid	8	UN2823	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12	
	Crotylene	3	UN1144	I	3	T11, TP2	150	201	243	1 L	30 L	E		
	Cupriethylenediamine solution	8	UN1761	II	8, 6.1	IB2, T7, TP2	154	202	243	1 L	30 L	A		
				III	8, 6.1	IB3, T7, TP1, TP28	154	203	242	5 L	60 L	A	95	
	Cutters, cable, explosive	1.4S	UN0070	II	1.4S		None	62	None	25 kg	100 kg	05		
	Cyanide or cyanide mixtures, dry, see Cyanides, inorganic, solid, n.o.s.			I	6.1	B37, T14, TP2, TP13, TP27	None	201	243	1 L		B	40, 52	
	Cyanide solutions, n.o.s.	6.1	UN1935	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40, 52	
				III	6.1	IB3, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	40, 52	
	Cyanides, inorganic, solid, n.o.s.	6.1	UN1588	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52	

			II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
			III	6.1	IB8, IP3, N74, N75, T1, TP33	153	213	240	100 kg	200 kg	A	52
Cyanogen	2.3	UN1026		2.3, 2.1		None	304	245	Forbidden	Forbidden	D	40
Cyanogen bromide	6.1	UN1899	I	6.1, 8	A6, A8, T6, TP33	None	211	242	1 kg	15 kg	D	40
Cyanogen chloride, stabilized	2.3	UN1589		2.3, 8		None	192	245	Forbidden	Forbidden	D	40
Cyanuric chloride	8	UN2670	II	8	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	A	12, 40
Cyanuric triazide	Forbidden											
Cyclobutane	2.1	UN2601		2.1		306	304	314, 315	Forbidden	150 kg	B	40
Cyclobutyl chloroformate	6.1	UN2744	II	6.1, 8, 3	IB1, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
1,5-Cyclododecatriene	6.1	UN2518	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
Cycloheptane	3	UN2241	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Cycloheptatriene	3	UN2603	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
Cycloheptene	3	UN2242	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
Cyclohexane	3	UN1145	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
Cyclohexanone	3	UN1915	III	3	B1, IB3, T2, TP1	150	203	242	20 L	220 L	A	
Cyclohexene	3	UN2256	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
Cyclohexenyltrichlorosilane	8	UN1762	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Cyclohexyl acetate	3	UN2243	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclohexyl isocyanate	6.1	UN2488	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Cyclohexyl mercaptan	3	UN3054	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40, 95
Cyclohexylamine	8	UN2357	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	40
Cyclohexyltrichlorosilane	8	UN1763	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Cyclonite and cyclotetramethylenetetranitramine mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or desensitized <i>etc.</i>												
Cyclonite and HMX mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or desensitized <i>etc.</i>												
Cyclonite and octogen mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or desensitized <i>etc.</i>												
Cyclonite, <i>see</i> Cyclotrimethylenetrinitramine, <i>etc.</i>												
Cyclooctadiene phosphines, <i>see</i> 9-Phosphabicyclononanes												
Cyclooctadienes	3	UN2520	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclooctatetraene	3	UN2358	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Cyclopentane	3	UN1146	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
Cyclopentane, methyl, <i>see</i> Methylcyclopentane												
Cyclopentanol	3	UN2244	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentanone	3	UN2245	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Cyclopentene	3	UN2246	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	
Cyclopropane	2.1	UN1027		2.1	T50	306	304	314, 315	Forbidden	150 kg	E	40
Cyclooctamethylene tetranitramine (dry or unplagmatized) (HMX)	Forbidden											
Cyclooctamethylenetetranitramine, desensitized or Octogen, desensitized or HMX, desensitized	1.1D	UN0484	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclooctamethylenetetranitramine, wetted or HMX, wetted or Octogen, wetted with not less than 15 percent water, by mass	1.1D	UN0226	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclooctamethylenetetranitramine mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or desensitized <i>etc.</i>												
Cyclooctamethylenetetranitramine and octogen mixtures, wetted or desensitized <i>etc.</i>												
Cyclooctamethylenetetranitramine and HMX mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or desensitized <i>etc.</i>												
Cyclooctamethylenetetranitramine, desensitized or Cyclonite, desensitized or Hexogen, desensitized or RDX, desensitized	1.1D	UN0483	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cyclooctamethylenetetranitramine, wetted or Cyclonite, wetted or Hexogen, wetted or RDX, wetted with not less than 15 percent water by mass	1.1D	UN0072	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Cymenes	3	UN2046	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Dangerous Goods in Machinery or Dangerous Goods in Apparatus	9	UN3363			A19, A20, IB6, IP2, T3, TP33	None	222	None	No limit	No limit	A	
Decaborane	4.1	UN1868	II	4.1, 6.1		None	212	None	Forbidden	50 kg	A	74
Decahydronaphthalene	3	UN1147	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
n-Decane	3	UN2247	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

\$172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Detagrating metal salts of aromatic nitroderivatives, n.o.s. <i>Delay electric igniter, see Igniters</i>	1.3C	UN0132	II	1.3C ..	164	None ...	62	None ...	Forbidden	Forbidden	10	5E
	<i>Depth charges, see Charges, depth</i>	3	UN3379	I 3	1.3		164	None	201	None	Forbidden	Forbidden	D	36
G	Desensitized explosive, liquid, n.o.s. Desensitized explosive, solid, n.o.s. <i>Detonating relays, see Detonators, etc</i>	4.1	UN3380	I 4.1	4.1	164	None	211	None	Forbidden	Forbidden	D	28, 36
	Detonator assemblies, <i>see</i> Detonators, <i>etc</i>	1.1B	UN0360	II	1.1B ..	103	None	62	None	Forbidden	Forbidden	11	
	Detonator assemblies, non-electric <i>for blasting</i>	1.4B	UN0361	II	1.4B ..		63(f),	62	None	None	Forbidden	Forbidden	75 kg	06
	Detonator, assemblies, non-electric <i>for blasting</i>	1.4S	UN0500	II	1.4S ..	63(g),	62	None	None	25 kg	100 kg	05	
	Detonators, electric, <i>for blasting</i>	1.1B	UN0030	II	1.1B ..	63(f),	62	None	None	Forbidden	Forbidden	11	
	Detonators, electric, <i>for blasting</i>	1.4B	UN0255	II	1.4B ..	63(f),	62	None	None	Forbidden	75 kg	06	
	Detonators, electric <i>for blasting</i>	1.4S	UN0456	II	1.4S ..	63(f),	62	None	None	25 kg	100 kg	05	
	Detonators for ammunition	1.1B	UN0073	II	1.1B ..	103	None	62	None	Forbidden	Forbidden	11	
	Detonators for ammunition	1.2B	UN0364	II	1.2B ..		63(g),	62	None	None	Forbidden	Forbidden	75 kg	06
	Detonators for ammunition	1.4B	UN0365	II	1.4B ..	63(f),	62	None	None	Forbidden	Forbidden	100 kg	05
	Detonators for ammunition	1.4S	UN0366	II	1.4S ..	63(g),	62	None	None	Forbidden	Forbidden	75 kg	06
	Detonators, non-electric, <i>for blasting</i>	1.1B	UN0029	II	1.1B ..	103	None	62	None	Forbidden	Forbidden	11	
	Detonators, non-electric, <i>for blasting</i>	1.4B	UN0267	II	1.4B ..		63(f),	62	None	None	Forbidden	75 kg	06
	Detonators, non-electric <i>for blasting</i>	1.4S	UN0455	II	1.4S ..	63(g),	62	None	None	25 kg	100 kg	5	
	Deuterium, compressed	2.1	UN1957	.....	2.1	306	306	302	None	Forbidden	150 kg	E	40
	Devices, small, hydrocarbon gas powered or Hydrocarbon gas refills for small devices with re-lease device	2.1	UN3150		2.1		306	304	None	None	1 kg	15 kg	B	40
	Di-n-amyamine	Forbidden	UN2841	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Di-n-butyl peroxycarbonate, with more than 52 percent in solution	8	UN2248	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	
	2,2-Di-(tert-butylperoxy) butane, with more than 55 percent in solution	Forbidden											
	Di-(tert-butylperoxy) phthalate, with more than 55 percent in solution	Forbidden											
	2,2-Di-(4-di-tert-butylperoxycyclohexyl) propane, with more than 42 percent with inert solid	Forbidden											
	Di-2,4-dichlorobenzoyl peroxide, with more than 75 percent with water	Forbidden											
	1,2-Di-(dimethylamino)ethane	3	UN2372	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Di-2-ethylhexyl phosphonic acid, <i>see</i> Disocetyl acid phosphate	Forbidden											
	Di-(1-hydroxytetrazole) (dry)	Forbidden											
	Di-(1-naphthoyl) peroxide	Forbidden											
	a.a'-Di-(nitroxy) methylether	Forbidden											
	Di-(beta-nitroxyethyl) ammonium nitrate	Forbidden											
	Diacetone alcohol	3	UN1148	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Diacetone alcohol peroxides, with more than 57 percent in solution with more than 9 percent hydrogen peroxide, less than 26 percent diacetone alcohol and less than 9 percent water, total active oxygen content more than 9 percent by mass	Forbidden		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Diacetyl, <i>see</i> Butanedione												
	Diacetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Diagnostic specimen	6.2	UN2359	II	3, 6.1, 8,	A82	134	199	None	4 L or 4 kg	4 L or 4 kg	A	40
	Diallylamine	3	UN2359	II	3, 6.1, 8,	IB2, T7, TP1	150	202	243	1 L	5 L	B	21, 40, 100
	Diallylether	3	UN2360	II	3, 6.1	IB2, N12, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	4,4'-Diaminodiphenyl methane	6.1	UN2651	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	p-Diazoobenzene	Forbidden											
	1,2-Diazoethane	Forbidden											
	1,1'-Diazoaminonaphthalene	Forbidden											
	Diazaminotetrazole (dry)	Forbidden											
	Diazodinitrophenol (dry)	Forbidden											
	Diazodinitrophenol, wetted with not less than 40 percent water or mixture of alcohol and water, by mass	1.1A	UN0074	II	1.1A ..	111, 117	None	62	None	Forbidden	Forbidden	12	
	Diazodiphenylmethane	Forbidden											
	Diazodiphenylmethane (drv)	Forbidden											

Diazonium perchlorates (dry)	Forbidden	UN2434	II	8	2.3, 2.1	B2, IB2, T7, TP2, TP13	154	202	242	None	Forbidden	30 L	C	40
1,3-Diazopropane	Forbidden	UN1911	2.3	UN1911	2.1	5	None	302	245	None	Forbidden	Forbidden	D	40, 57
Dibenzyl peroxycarbonate, with more than 87 percent with water	Forbidden	NA1911	2.1	NA1911	2.1	5	None	302	245	None	Forbidden	Forbidden	D	40, 57
Dibenzylchlorosilane	Forbidden	UN2648	II	6.1	6.1	IB2, T7, TP2	153	202	243	5 L	5 L	60 L	B	40
Diborane	2.3	UN2872	III	6.1	6.1	IB3, T4, TP1	153	203	241	60 L	60 L	220 L	A	25
Diborane mixtures	2.1	UN1941	III	None	None	T11, TP2	155	203	241	100 L	100 L	220 L	A	25
Dibromoacetylene	Forbidden	UN2684	III	6.1	6.1	IB3, T4, TP1	153	203	241	60 L	60 L	220 L	A	25
1,2-Dibromobutane-3-one	6.1	UN1149	III	3	3	B1, IB3, T2, TP1	150	203	242	60 L	60 L	220 L	A	25
Dibromochloropropane	6.1	UN2873	III	6.1	6.1	IB3, T4, TP1	153	203	241	60 L	60 L	220 L	A	25
Dibromodifluoromethane, R12B2	9	UN2650	II	6.1	6.1	IB2, T7, TP2	153	202	243	5 L	5 L	60 L	A	12, 40, 74
1,2-Dibromoethane, see Ethylene dibromide	6.1	NA9264	I	6.1	6.1	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	Forbidden	A	40
Dibromomethane	3	UN1764	II	8	8	A3, A6, A7, B2, IB2, N34, T6, TP2, TP12	154	202	242	1 L	1 L	30 L	A	12, 40
Dibutyl ethers	6.1	UN2649	II	6.1	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	25 kg	100 kg	B	12, 40
Dibutylaminoethanol	6.1	UN1765	II	8	8	A3, A6, A7, B2, B6, IB2, N34, T7, TP2	154	202	242	1 L	1 L	30 L	D	40
N,N'-Dichlorazodicarbonylamine (salts of) (dry)	Forbidden	UN1590	II	6.1	6.1	IB2, T7, TP2	153	202	243	5 L	5 L	60 L	A	40
1,1-Dichloro-1-nitroethane	6.1	UN3442	II	6.1	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	25 kg	100 kg	A	40
3,5-Dichloro-2,4,6-trifluoropyridine	6.1	UN1591	III	6.1	6.1	IB3, T4, TP1	153	203	241	60 L	60 L	220 L	A	40
Dichloroacetic acid	8	UN1916	II	6.1, 3	6.1, 3	IB2, N33, N34, T7, TP2	153	202	243	5 L	5 L	60 L	A	40
Dichloroacetylene	Forbidden	UN2602	II	2.2	2.2	T50	306	304	314, 315	75 kg	75 kg	150 kg	A	40
Dichloroanilines, liquid	6.1	UN1028	II	2.2	2.2	T50	306	304	314, 315	75 kg	75 kg	150 kg	A	40
Dichloroanilines, solid	6.1	UN2249	I	6.1, 3	6.1, 3	IB2, T4, TP1	None	201	243	Forbidden	Forbidden	Forbidden	B	40
o-Dichlorobenzene	6.1	UN2362	II	3	3	IB2, T4, TP1	150	202	242	5 L	5 L	60 L	B	40
2,2-Dichloroethyl ether	6.1	UN1150	II	3	3	IB2, T7, TP2	150	202	242	5 L	5 L	60 L	B	40
Dichlorodifluoromethane and difluoroethane azeotropic mixture or Refrigerant gas R 500 with approximately 74 percent dichlorodifluoromethane	2.2	UN1029	II	2.2	2.2	T50	306	304	314, 315	75 kg	75 kg	150 kg	A	40
Dichlorodifluoromethane or Refrigerant gas R 12	2.2	UN2465	II	5.1	5.1	28, IB8, IP4, T3, TP33	152	212	240	5 kg	5 kg	25 kg	A	13
Dichlorodimethyl ether, symmetrical	6.1	UN2490	II	6.1	6.1	IB2, T7, TP2	153	203	243	5 L	5 L	60 L	B	40
1,1-Dichloroethane	3	UN1593	III	6.1	6.1	IB3, IP8, N36, T7, TP2	153	202	241	60 L	60 L	220 L	A	40
1,2-Dichloroethane, see Ethylene dichloride	Forbidden	UN1152	III	3	3	T7, TP2	150	203	242	60 L	60 L	220 L	A	40
Dichloroethyl sulfide	3	UN2250	II	6.1	6.1	B1, IB3, T2, TP1	150	212	242	25 kg	25 kg	100 kg	B	25, 40, 48
1,2-Dichloroethylene	2.2	UN1766	II	8	8	IB8, IP2, IP4, T3, TP33	None	202	242	Forbidden	Forbidden	Forbidden	C	40
Dichlorofluoromethane or Refrigerant gas R21	5.1	UN1279	II	3	3	A7, B2, B6, IB2, N34, T7, TP2, TP13	150	202	242	5 L	5 L	60 L	B	40
Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts	6.1	UN2750	II	6.1	6.1	IB2, N36, T4, TP1	153	202	242	5 L	5 L	60 L	B	40
Dichloroisopropyl ether	6.1	UN2047	II	3	3	IB2, T7, TP2	153	202	243	5 L	5 L	60 L	A	12, 40
Dichloromethane	6.1	UN2189	III	3	3	IB2, T4, TP1	150	202	242	5 L	5 L	60 L	B	40
Dichloropentanes	3	UN1958	II	2.2	2.2	B1, IB3, T2, TP1	150	203	242	60 L	60 L	220 L	A	17, 40
Dichlorophenyl isocyanates	6.1	UN2565	III	2.3, 2.1, 8	2.3, 2.1, 8	2, B9, B14	None	304	314, 315	75 kg	75 kg	150 kg	A	40
Dichlorophenyltrichlorosilane	8	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
1,2-Dichloropropane	3	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
1,3-Dichloropropanol-2	6.1	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dichloropropene and propylene dichloride mixture, see 1,2-Dichloropropane	3	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dichloropropenes	3	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dichlorosilane	2.3	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114	2.2	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dichlorovinylchlorosilane	Forbidden	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dicycloheptadiene, see Bicyclo [2.2.1] hepta-2,5-diene, stabilized	Forbidden	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40
Dicyclohexylamine	Forbidden	UN2565	III	8	8	IB3, T4, TP1	154	203	241	5 L	5 L	60 L	A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identi- fication Num- bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age		
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
D	Dicyclohexylammonium nitrite	4.1	UN2687	III	4.1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	48	
	Dicyclopentadiene	3	UN2048	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Didymium nitrate	5.1	UN1465	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A		
	Diesel fuel	3	NA1993	III	None	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A		
	Diesel fuel	3	UN1202	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Diethanol nitrosamine dinitrate (dry)	Forbidden				TP1								
	Diethoxymethane	3	UN2373	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E		
	3,3-Diethoxypropene	3	UN2374	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Diethyl carbonate	3	UN2366	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Diethyl cellosolve, see Ethylene glycol diethyl ether													
I	Diethyl ether or Ethyl ether	3	UN1155	I	3	T11, TP2	150	201	243	1 L	30 L	E	40	
	Diethyl ketone	3	UN1156	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Diethyl peroxycarbonate, with more than 27 percent in solution	Forbidden												
	Diethyl sulfate	6.1	UN1594	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	C		
	Diethyl sulfide	3	UN2375	II	3	IB2, T7, TP1, TP13	None	202	243	5 L	60 L	E		
	Diethylamine	3	UN1154	II	3, 8	A3, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40	
	2-Diethylaminoethanol	8	UN2686	II	8, 3	B2, IB2, T7, TP2	None	202	243	1 L	30 L	A		
	3-Diethylamino-propylamine	3	UN2684	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A		
	N, N-Diethylaniline	6.1	UN2432	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	Diethylbenzene	3	UN2049	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
+	Diethyldichlorosilane	8	UN1767	II	8, 3	A7, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40	
	Diethylene glycol dinitrate	Forbidden												
	Diethyleneglycol dinitrate, desensitized with not less than 25 percent non-volatile water-insol- ible phlegmatizer, by mass	1.1D	UN0075	II	1.1D		None	62	None	Forbidden	Forbidden	13	21E	
	Diethylenetriamine	8	UN2079	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40, 52	
	N,N-Diethylethylenediamine	8	UN2685	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A		
	Diethylgold bromide	Forbidden												
	Diethylthiophosphoryl chloride	8	UN2751	II	8	B2, IB2, T7, TP2	None	212	240	15 kg	50 kg	D	12, 40	
	Diethylzinc	4.2	UN1366	I	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18	
	Difluorochloroethanes, see 1-Chloro-1,1-difluoroethanes													
	1,1-Difluoroethane or Refrigerant gas R 152a	2.1	UN1030			2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
	1,1-Difluoroethylene or Refrigerant gas R 1132a	2.1	UN1959			2.1	T50	306	304	Forbidden	150 kg	E	40	
	Difluoromethane or Refrigerant gas R 32	2.1	UN3252			2.1		306	302	314, 315	Forbidden	150 kg	D	40
	Difluorophosphoric acid, anhydrous	8	UN1768	II	8	A6, A7, B2, IB2, N5, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	40	
	2,3-Dihydropyran	3	UN2376	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	1,8-Dihydroxy-2,4,5,7-tetranitroanthraquinone (chrysamminic acid)	Forbidden												
	Diacetylene	Forbidden												
	Diisobutyl ketone	3	UN1157	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Diisobutylamine	3	UN2361	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	50	
	Disobutylene, isomeric compounds	3	UN2050	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Disocetyl acid phosphate	8	UN1902	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A		
	Disopropyl ether	3	UN1159	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40	
	Disopropylamine	3	UN1158	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B		
	Disopropylbenzene hydroperoxide, with more than 72 percent in solution	Forbidden												
	Diketene, stabilized	6.1	UN2521	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	26, 27, 40	
	1,2-Dimethoxyethane	3	UN2252	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	1,1-Dimethoxyethane	3	UN2377	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	B		
	Dimethyl carbonate	3	UN1161	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Dimethyl chlorophosphate, see Dimethyl thiophosphoryl chloride													

2,5-Dimethyl-2,5-dihydroperoxy hexane, with more than 82 percent with water	Forbidden	UN2381	II	3	.....	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Dimethyl disulfide	3	UN1033	.....	2.1	.....	T50	306	304	314	Forbidden	150 kg	B	40
Dimethyl ether	2.1	.....	.....	.....	.....	.....	.....	.....	315	.....	.....	.....	.....
Dimethyl-N-propylamine	3	UN2266	II	3, 8	.....	IB2, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
Dimethyl sulfate	6.1	UN1595	I	6.1, 8	.....	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Dimethyl sulfide	3	UN1164	II	3	.....	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40
Dimethyl thiophosphoryl chloride	6.1	UN2267	II	6.1, 8	.....	IB2, T7, TP2	153	202	243	1 L	30 L	B	25
Dimethylamine, anhydrous	2.1	UN1032	.....	2.1	.....	T50	None	304	314	Forbidden	150 kg	D	40
Dimethylamine solution	3	UN1160	II	3, 8	.....	IB2, T7, TP1	150	202	243	1 L	5 L	B	.....
2-Dimethylaminoacetanitrile	3	UN2378	II	3, 6.1	.....	IB2, T7, TP1	150	202	243	1 L	60 L	A	52, 40
2-Dimethylaminoethanol	8	UN2051	II	8, 3	.....	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	.....
2-Dimethylaminoethyl acrylate	6.1	UN3302	II	6.1	.....	IB2, T7, TP2	153	202	243	5 L	60 L	D	25
2-Dimethylaminoethyl methacrylate	6.1	UN2522	II	6.1	.....	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
N,N-Dimethylaniline	6.1	UN2253	II	6.1	.....	IB1, T7, TP2	153	202	243	5 L	60 L	A	.....
2,3-Dimethylbutane	3	UN2457	II	3	.....	IB2, T7, TP1	150	202	242	5 L	60 L	E	.....
1,3-Dimethylbutylamine	3	UN2379	II	3, 8	.....	IB2, T7, TP1	150	202	243	1 L	5 L	B	.....
Dimethylcarbamoyl chloride	8	UN2262	II	8	.....	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
Dimethylcyclohexanes	3	UN2263	II	3	.....	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
N,N-Dimethylcyclohexylamine	8	UN2264	II	8, 3	.....	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
N,N-Dimethylcyclohexylamine	3	UN1162	II	3, 8	.....	B77, IB2, T7, TP2, TP13	None	202	243	Forbidden	Forbidden	B	40
Dimethyldichlorosilane	3	UN2380	II	3	.....	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Dimethyldiethoxysilane	3	UN2707	II	3	.....	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Dimethyldioxanes	3	.....	II	3	.....	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
N,N-Dimethylformamide	3	UN2265	III	3	.....	B1, IB3, T2, TP2	150	203	242	60 L	220 L	A	.....
Dimethylhexane dihydroperoxide (dry)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dimethylhydrazine, symmetrical	6.1	UN2382	I	6.1, 3	.....	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 74
Dimethylhydrazine, unsymmetrical	6.1	UN1163	I	6.1, 3, 8	.....	2, B7, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 38, 40, 100
2,2-Dimethylpropane	2.1	UN2044	.....	2.1	.....	.....	306	304	314	Forbidden	150 kg	E	40
Dimethylzinc	4.2	UN1370	I	4.2, 4.3	.....	B11, B16, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Dinitro-o-cresol	6.1	UN1598	II	6.1	.....	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
1,3-Dinitro-5,5-dimethyl hydantoin	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dinitro-7,8-dimethylglycolul (dry)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,3-Dinitro-4,5-dinitrobenzene	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,4-Dinitro-1,1,4,4-tetramethylolbutanetriflate (dry)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2,4-Dinitro-1,3,5-trimethylbenzene	6.1	UN1596	II	6.1	.....	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
Dinitroanilines	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dinitrobenzenes, liquid	6.1	UN1597	II	6.1	.....	11, IB2, T7, TP2	153	202	243	5 L	60 L	A	91
Dinitrobenzenes, solid	6.1	UN3443	II	6.1	.....	11, IB3, T7, TP2	153	203	241	60 L	220 L	A	91
Dinitrochlorobenzene, see Chlorodinitrobenzene	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,2-Dinitroethane	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,1-Dinitroethane (dry)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dinitrogen tetroxide	2.3	UN1067	.....	2.3	5.1, 8	1, B7, B14, B45, B46, B61, B66, B67, B77, T50, TP21	None	336	314	Forbidden	Forbidden	D	40, 89, 90
Dinitrophenol solutions	1.1D	UN0489	II	1.1D	.....	.....	None	62	None	Forbidden	Forbidden	10	.....
Dinitrophenol	1.1D	UN0076	II	1.1D	.....	.....	None	62	None	Forbidden	Forbidden	10	5E
Dinitrophenol, dry or wetted with less than 15 percent water, by mass	6.1	UN1599	II	6.1	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	36
Dinitrophenol solutions	4.1	UN1320	III	6.1	.....	IB3, T4, TP1	153	203	241	60 L	220 L	A	36
Dinitrophenol, wetted with not less than 15 percent water, by mass	1.3C	UN0077	I	1.3C	6.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36
Dinitrophenolates alkali metals, dry or wetted with less than 15 percent water, by mass	4.1	UN1321	I	4.1	6.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	5E
Dinitrophenolates, wetted with not less than 15 percent water, by mass	4.1	.....	I	4.1	6.1	.....	None	211	None	1 kg	15 kg	E	28, 36

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
	Dinitropropylene glycol	Forbidden	UN0078	II	1.1D ..		None	62	None	Forbidden	Forbidden	10	5E	
	Dinitroresorcinol, dry or wetted with less than 15 percent water, by mass	Forbidden												
	2,4-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden												
	4,6-Dinitroresorcinol (heavy metal salts of) (dry)	Forbidden	UN1322	I	4.1	23, A8, A19, A20, N41	None	211	None	1 kg	15 kg	E	28, 36	
	Dinitroresorcinol, wetted with not less than 15 percent water, by mass													
	3,5-Dinitrosalicylic acid (lead salt) (dry)	Forbidden												
	Dinitrobenzene	1.3C	UN0406	II	1.3C ..		None	62	None	Forbidden	Forbidden	10		
	Dinitrobenzylamide and salts of (dry)	Forbidden												
	2,2-Dinitrosilbene	Forbidden												
	Dinitrotoluenes, liquid	6.1	UN2038	II	6.1	IB2, T7, TP2	IB8, IP2, IP4, T3, TP33	153	202	243	5 L	60 L	A	
	Dinitrotoluenes, solid	6.1	UN3454	II	6.1	6.1		153	212	242	25 kg	100 kg	A	
	Dinitrotoluenes, molten	6.1	UN1600	II	6.1	6.1	T7, TP3	None	202	243	Forbidden	Forbidden	C	
	1,9-Dinitroxy pentamethylene-2,4, 6,8-tetramine (dry)	Forbidden												
	Dioxane	3	UN1165	II	3		IB2, T4, TP1	150	202	242	5 L	60 L	B	
Dipentene	3	UN1166	II	3		IB2, T4, TP1	150	202	242	5 L	60 L	B	40	
G	Diphenylamine	6.1	UN2052	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Diphenylamine chloroarsine	6.1	UN1698	I	6.1	T6, TP33	None	201	None	Forbidden	Forbidden	D	40	
	Diphenylchloroarsine, liquid	6.1	UN1699	I	6.1	A8, B14, B32, N33, N34, T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	D	40	
	Diphenyl-chloroarsine, solid	6.1	UN3450	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40	
	Diphenyldichlorosilane	8	UN1769	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40	
	Diphenylmethyl bromide	8	UN1770	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40	
	Dipicryl sulfide, dry or wetted with less than 10 percent water, by mass	1.1D	UN0401	II	1.1D ..	162, A2, N41, N84	None	62	None	Forbidden	Forbidden	10		
	Dipicryl sulfide, wetted with not less than 10 percent water, by mass	4.1	UN2852	I	4.1		None	211	None	Forbidden	0.5 kg	D	28	
	Dipicrylamine, see Hexanitrodiphenylamine													
	Dipropionyl peroxide, with more than 28 percent in solution	Forbidden												
	D-n-propyl ether	3	UN2384	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Dipropyl ketone	3	UN2710	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Dipropylamine	3	UN2383	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B		
	Disinfectant, liquid, corrosive, n.o.s.	8	UN1903	I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B		
G	Disinfectants, liquid, corrosive n.o.s.	8	UN1903	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B		
	Disinfectants, liquid, toxic, n.o.s.	6.1	UN3142	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A		
				I	6.1	A4, T14, TP2, TP27	None	201	243	1 L	30 L	A	40	
G	Disinfectants, solid, toxic, n.o.s.			II	6.1	IB2, T11, TP2	153	202	243	5 L	60 L	A	40	
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40	
				I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40	
G	Disinfectants, liquid, corrosive n.o.s.	6.1	UN1601	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40	
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A		
G	Sodium trioxosilicate	8	UN3253	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A		
	Dispersant gases, n.o.s. see Refrigerant gases, n.o.s.													
	Divinyl ether, stabilized	3	UN1167	I	3	A7, T11, TP2	None	201	243	1 L	30 L	E	40	
G	Dodecyltrichlorosilane	8	UN1771	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40	
	Dry ice, see Carbon dioxide, solid													
	Dyes, liquid, corrosive, n.o.s. or Dye intermediates, liquid, corrosive, n.o.s.	8	UN2801	I	8	11, A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A		
				II	8	11, B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	A		

G	Dyes, liquid, toxic, n.o.s. or Dye intermediates, liquid, toxic, n.o.s.	6.1	UN1602	III	8	11, IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	.....
	.....	.....	.....	I	6.1	.....	None	201	243	1 L	30 L	A	.....
	.....	.....	.....	II	6.1	IB2	153	202	243	5 L	60 L	A	.....
G	Dyes, solid, corrosive, n.o.s. or Dye intermediates, solid, corrosive, n.o.s.	8	UN3147	III	6.1	IB3	153	203	241	60 L	220 L	A	.....
	.....	.....	.....	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	A	.....
	.....	.....	.....	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
	.....	.....	.....	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
G	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	UN3143	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	.....
	.....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Dynamite, see Explosive, blasting, type A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Electrolyte (acid or alkali) for batteries, see Battery fluid, acid or Battery fluid, alkali	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point	3	UN3256	III	3	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	.....
	Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)	9	UN3257	III	9	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	85
	Elevated temperature solid, n.o.s., at or above 240 C, see § 173.247(h)(4)	9	UN3258	III	9	247(h)(4)	247(h)(4)	None	247	Forbidden	Forbidden	A	85
	Engines, internal combustion, flammable gas powered	9	UN3166	.....	9	135	220	220	220	Forbidden	No limit	A	.....
	Engines, internal combustion, flammable liquid powered	9	UN3166	.....	9	135	220	220	220	Forbidden	No limit	A	.....
G	Environmentally hazardous substances, liquid, n.o.s.	9	UN3062	III	9	8, 146, IB3, T4, TP1, TP29	155	203	241	No limit	No limit	A	.....
													
G	Environmentally hazardous substances, solid, n.o.s.	9	UN3077	III	9	8, 146, B54, IB8, IP3, N20, T1, TP33	155	213	240	No limit	No limit	A	.....
													
+	Epibromohydrin	6.1	UN2558	I	6.1, 3	T14, TP2, TP13	None	201	243	Forbidden	Forbidden	D	40
	Epichlorohydrin	6.1	UN2023	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	40
	1,2-Epoxy-3-ethoxypropane	3	UN2752	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Esters, n.o.s.	3	UN3272	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....	.....	III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
D	Etching acid, liquid, n.o.s., see Hydrofluoric acid, solution etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethane	2.1	UN1035	.....	2.1	T75, TP5	306	304	302	Forbidden	150 kg	E	40
	Ethane-Propane mixture, refrigerated liquid	2.1	NA1961	.....	2.1	.....	None	316	314	Forbidden	Forbidden	D	40
	Ethane, refrigerated liquid	2.1	UN1961	.....	2.1	T75, TP5	None	None	315	Forbidden	Forbidden	D	40
	Ethanol amine dinitrate	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethanol or Ethyl alcohol or Ethanol solutions or Ethyl alcohol solutions	3	UN1170	II	3	24, IB2, T4, TP1	150	202	242	5 L	60 L	A	.....
	.....	.....	.....	III	3	24, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Ethanolamine or Ethanolamine solutions	8	UN2491	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Ether, see Diethyl ether	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethers, n.o.s.	3	UN3271	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	.....
	.....	.....	.....	III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	.....
	Ethyl acetate	3	UN1173	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl acrylate, stabilized	3	UN1917	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	40
													
	Ethyl alcohol, see Ethanol	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethyl aldehyde, see Acetaldehyde	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ethyl amyl ketone	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	N-Ethylbenzyloluidines, solid	6.1	UN3460	III	6.1	B1, IB3, T2, TP1	150	203	242	100 kg	220 L	A	.....
	.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	60 L	200 kg	A	.....
	N-Ethyl-N-benzylaniline	6.1	UN2274	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Ethyl borate	3	UN1176	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl bromide	6.1	UN1891	II	6.1	IB2, IP8, T7, TP2, TP13	153	202	243	5 L	60 L	B	40, 85
													
	Ethyl bromoacetate	6.1	UN1603	II	6.1, 3	IB2, T7, TP2	None	202	243	Forbidden	Forbidden	D	40
	Ethyl butyl ether	3	UN1179	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Ethyl butyrate	3	UN1180	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Ethyl chloride	2.1	UN1037	.....	2.1	B77, T50	None	322	314	Forbidden	150 kg	B	40
													
	Ethyl chloroacetate	6.1	UN1181	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ethyl chloroformate	6.1	UN1182	I	6.1, 3, 8.	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	21, 40, 100
+	Ethyl 2-chloropropionate	3	UN2935	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Ethyl chloroformate	8	UN2826	II	8, 6.1, 3.	2, B9, B14, B32, B74, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	
	Ethyl crotonate	3	UN1862	II	3	IB2, T4, TP2	150	202	242	5 L	60 L	B	
	Ethyl ether, see Diethyl ether	2.1	UN2453		2.1		306	304	314	Forbidden	150 kg	E	40
	Ethyl fluoride or Refrigerant gas R161								315				
	Ethyl formate	3	UN1190	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Ethyl hydroperoxide	Forbidden											
	Ethyl isobutyrate	3	UN2385	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
+	Ethyl isocyanate	3	UN2481	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Ethyl lactate	3	UN1192	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethyl mercaptan	3	UN2363	I	3	A6, T11, TP2, TP13	None	201	243	Forbidden	30 L	E	95, 102
	Ethyl methacrylate, stabilized	3	UN2277	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl methyl ether	2.1	UN1039		2.1		None	201	314	Forbidden	150 kg	B	40
	Ethyl methyl ketone or Methyl ethyl ketone	3	UN1193	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl nitrite solutions	3	UN1194	I	3, 6.1		None	201	None	Forbidden	Forbidden	E	40, 105
	Ethyl orthoformate	3	UN2524	III	3	B1, IB3, T2, TP1	150	203	242	220 L	220 L	A	
	Ethyl oxalate	6.1	UN2525	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Ethyl perchlorate	Forbidden											
D	Ethyl phosphonothioic dichloride, anhydrous	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
D	Ethyl phosphonous dichloride, anhydrous pyrophoric liquid	6.1	NA2845	I	6.1, 4.2.	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	18
D	Ethyl phosphorodichloridate	6.1	NA2927	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethyl propionate	3	UN1195	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Ethyl propyl ether	3	UN2615	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Ethyl silicate, see Tetraethyl silicate												
	Ethylacetylene, stabilized	2.1	UN2452		2.1		None	304	314	Forbidden	150 kg	B	40
	Ethylamine	2.1	UN1036		2.1		None	321	314	Forbidden	150 kg	D	40
	Ethylamine, aqueous solution with not less than 50 percent but not more than 70 percent ethylamine	3	UN2270	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	N-Ethylaniline	6.1	UN2272	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	2-Ethylaniline	6.1	UN2273	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
	Ethylbenzene	3	UN1175	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	N-Ethylbenzyloluidines liquid	6.1	UN2753	III	6.1	IB3, T7, TP1	153	203	241	60 L	220 L	A	
	2-Ethylbutanol	3	UN2275	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	2-Ethylbutyl acetate	3	UN1177	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	2-Ethylbutyraldehyde	3	UN1178	III	3	B1, IB3, T2, TP1	150	202	242	5 L	60 L	B	
	Ethylchloroarsine	6.1	UN1892	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethylchlorosilane	4.3	UN1183	I	4.3, 8, 3.	A2, A3, A7, N34, T10, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100

Ethylene, acetylene and propylene in mixture, refrigerated liquid with at least 71.5 percent ethylene with not more than 22.5 percent acetylene and not more than 6 percent propylene.	2.1	UN3138	.....	2.1	.....	T75, TP5	None	304	314, 315, 244	Forbidden	D	40, 57
Ethylene chlorohydrin	6.1	UN1135	I	6.1, 3	.....	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	D	40
Ethylene	2.1	UN1962	.....	2.1	.....		306	304	302	Forbidden	E	40
Ethylene diamine diphosphate	Forbidden						None	227	244	Forbidden	D	40
Ethylene dibromide	6.1	UN1605	I	6.1	.....	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	D	
Ethylene dichloride												
Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures.	3	UN1184	II	3, 6.1	.....	IB2, N36, T7, TP1	150	202	243	60 L	B	40
Ethylene glycol diethyl ether	3	UN1153	II	3	.....	IB2, T4, TP1	150	202	242	5 L	A	
Ethylene glycol dimethyl ether	Forbidden					B1, IB3, T2, TP1	150	203	242	220 L	A	
Ethylene glycol monoethyl ether	3	UN1171	III	3	.....			203	242	220 L	A	
Ethylene glycol monoethyl ether acetate	3	UN1172	III	3	.....	B1, IB3, T2, TP1	150	203	242	60 L	A	
Ethylene glycol monomethyl ether	3	UN1188	III	3	.....	B1, IB3, T2, TP1	150	203	242	220 L	A	
Ethylene glycol monomethyl ether acetate	3	UN1189	III	3	.....	B1, IB3, T2, TP1	150	203	242	60 L	A	
Ethylene oxide and carbon dioxide mixture with more than 87 percent ethylene oxide	2.3	UN3300	.....	2.3	.....	B1, IB3, T2, TP1	None	304	314	Forbidden	D	40
Ethylene oxide and carbon dioxide mixtures with more than 9 percent but not more than 87 percent ethylene oxide.	2.1	UN1041	.....	2.1	.....	T50	306	304	315	25 kg	B	40
Ethylene oxide and carbon dioxide mixtures with not more than 9 percent ethylene oxide	2.2	UN1952	.....	2.2	.....		306	304	315	150 kg	A	
Ethylene oxide and chlorotetrafluoroethane mixture with not more than 8.8 percent ethylene oxide.	2.2	UN3297	.....	2.2	.....	T50	306	304	315	150 kg	A	
Ethylene oxide and dichlorodifluoromethane mixture, with not more than 12.5 percent ethylene oxide.	2.2	UN3070	.....	2.2	.....	T50	306	304	315	150 kg	A	
Ethylene oxide and pentafluoroethane mixture with not more than 7.9 percent ethylene oxide	2.2	UN3298	.....	2.2	.....	T50	306	304	315	150 kg	A	
Ethylene oxide and propylene oxide mixtures, with not more than 30 percent ethylene oxide	3	UN2983	I	3, 6.1	.....	5, A11, N4, N34, T14, TP2, TP7, TP13	None	201	243	30 L	E	40
Ethylene oxide and tetrafluoroethane mixture with not more than 5.6 percent ethylene oxide	2.2	UN3299	.....	2.2	.....	T50	306	304	314, 315	150 kg	A	
Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 10 MPa (10 bar) at 50 degrees C.	2.3	UN1040	.....	2.3, 2.1	.....	4, T50, TP20	None	323	323	Forbidden	D	40
Ethylene, refrigerated liquid (cryogenic liquid)	2.1	UN1038	.....	2.1	.....	T75, TP5	None	316	318, 319	Forbidden	D	40
Ethylenediamine	8	UN1604	II	8, 3	.....	IB2, T7, TP2	154	202	243	1 L	A	40
Ethyleneimine, stabilized	6.1	UN1185	I	6.1, 3	.....	1, B9, B14, B30, B72, B77, N25, N32, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	D	40
Ethylhexaldehyde, see Octyl aldehydes etc												
2-Ethylhexyl chloroformate	6.1	UN2748	II	6.1, 8	.....	IB2, T7, TP2, TP13	153	202	243	30 L	A	12, 13, 21, 25, 40, 100
2-Ethylhexylamine	3	UN2276	III	3, 8	.....	B1, IB3, T4, TP1	150	203	242	60 L	A	40
Ethylphenyldichlorosilane	8	UN2435	II	8	.....	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	30 L	C	
1-Ethylpiperidine	3	UN2386	II	3, 8	.....	IB2, T7, TP1	150	202	243	1 L	B	
N-Ethylolouidines	6.1	UN2754	II	6.1	.....	IB2, T7, TP2	153	202	243	5 L	A	
Ethyltrichlorosilane	3	UN1196	II	3, 8	.....	A7, IB1, N34, T7, TP2, TP13	150	202	243	1 L	B	40
Etiologic agent, see Infectious substances, etc												
Explosive articles, see Articles, explosive, n.o.s. etc	1.1D	UN0081	II	1.1D	..		None	62	None	Forbidden	10	21E, 29E
Explosive, blasting, type A	1.1D	UN0082	II	1.1D	..		None	62	None	Forbidden	10	29E
Explosive, blasting, type B	1.1D	UN0083	II	1.1D	..	105, 106	None	62	None	Forbidden	10	29E
Explosive, blasting, type B or Agent blasting, Type B	1.1D	UN0083	II	1.1D	..	123	None	62	None	Forbidden	10	22E
Explosive, blasting, type C	1.1D	UN0083	II	1.1D	..		None	62	None	Forbidden	10	22E
Explosive, blasting, type D	1.1D	UN0084	II	1.1D	..		None	62	None	Forbidden	10	19E, 29E
Explosive, blasting, type E	1.1D	UN0241	II	1.1D	..		None	62	None	Forbidden	10	29E
Explosive, blasting, type E or Agent blasting, Type E	1.5D	UN0332	II	1.5D	..	105, 106	None	62	None	Forbidden	10	29E
Explosive, forbidden. See § 173.54	Forbidden											
Explosive substances, see Substances, explosive, n.o.s. etc.												

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

[illegible]

G	Flammable liquid, toxic, corrosive, n.o.s.	3	UN2986	I	3, 6.1, 8.	T14, TP2, TP13, TP27	None	201	243	Forbidden	2.5 L	E	21, 40, 100
				II	3, 6.1, 8.	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	5 L	B	21, 40, 100
G	Flammable liquids, corrosive, n.o.s.	3	UN2924	I	3, 8	T14, TP2	None	201	243	0.5 L	2.5 L	E	40
				II	3, 8	IB2, T11, TP2, TP27	150	202	243	1 L	5 L	B	40
				III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	A	40
G	Flammable liquids, n.o.s.	3	UN1993	I	3	T11, TP1, TP27	150	201	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
G	Flammable liquids, toxic, n.o.s.	3	UN1992	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	
G	Flammable solid, corrosive, inorganic, n.o.s.	4.1	UN3180	II	4.1, 8	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solid, inorganic, n.o.s.	4.1	UN3178	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solid, organic, molten, n.o.s.	4.1	UN3176	II	4.1	IB1, T3, TP3, TP26	151	212	240	Forbidden	Forbidden	C	
				III	4.1	IB1, T1, TP3, TP26	151	213	240	Forbidden	Forbidden	C	
G	Flammable solid, oxidizing, n.o.s.	4.1	UN3097	II	4.1, 5.1.	131, T1, TP33	None	214	214	Forbidden	Forbidden	E	40
				III	4.1, 5.1.	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
G	Flammable solid, toxic, inorganic, n.o.s.	4.1	UN3179	II	4.1, 6.1.	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
				III	4.1, 6.1.	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	D	40
G	Flammable solids, corrosive, organic, n.o.s.	4.1	UN2925	II	4.1, 8	A1, IB6, IP2, T3, TP33	151	213	242	25 kg	100 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solids, organic, n.o.s.	4.1	UN1325	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solids, toxic, organic, n.o.s.	4.1	UN2926	II	4.1, 6.1.	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
				III	4.1, 6.1.	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
	Flares, aerial	1.3G	UN0093	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, aerial	1.4G	UN0403	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Flares, aerial	1.4S	UN0404	II	1.4S		None	62	None	100 kg	05		
	Flares, aerial	1.1G	UN0420	II	1.1G		None	62	None	Forbidden	07		
	Flares, aerial	1.2G	UN0421	II	1.2G		None	62	None	Forbidden	07		
	Flares, aerial, see Flares, aerial												
	Flares, signal, see Cartridges, signal												
	Flares, surface	1.3G	UN0092	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, surface	1.1G	UN0418	II	1.1G		None	62	None	Forbidden	07		
	Flares, surface	1.2G	UN0419	II	1.2G		None	62	None	Forbidden	07		
	Flares, water-activated, see Contrivances, water-activated, etc												
	Flash powder	1.1G	UN0094	II	1.1G		None	62	None	Forbidden	15		
	Flash powder	1.3G	UN0305	II	1.3G		None	62	None	Forbidden	15		
	Flue dusts, poisonous, see Arsenical dust												
	Fluoric acid, see Hydrofluoric acid, etc												
	Fluorine, compressed	2.3	UN1045		2.3, 5.1, 8.		None	302	None	Forbidden	Forbidden	D	40, 89, 90
	Fluoroacetic acid	6.1	UN2642	I	6.1	IB7, IP1, T6, TP33	None	211	242	1 kg	15 kg	E	
	Fluoroanilines	6.1	UN2941	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Fluorobenzene	3	UN2387	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) Packaging (§173.***)				(9) Quantity limitations		(10) Vessel stow-age	
									Excep-tions	Non-bulk	Bulk	(8C)	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)				(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(8C)	(9A)	(9B)	(10A)	(10B)
	Fluoroboric acid	8	UN1775	II	8	.....	A6, A7, B2, B15, IB2, N3, N34, T7, TP2	154	202	242	242	242	1 L	30 L	A	.....
	Fluorophosphoric acid anhydrous	8	UN1776	II	8	.....	A6, A7, B2, IB2, N3, N34, T6, TP2, TP12	None	202	242	242	242	1 L	30 L	A	.....
	Fluorosilicates, n.o.s.	6.1	UN2856	III	6.1	.....	IB8, IP3, T1, TP2, TP12	153	213	240	240	240	100 kg	200 kg	A	52
	Fluorosilicic acid	8	UN1778	II	8	.....	A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12	None	202	242	242	242	1 L	30 L	A	.....
	Fluorosulfonic acid	8	UN1777	I	8	.....	A3, A6, A7, A10, B6, B10, N3, N36, T10, TP2, TP12	None	201	243	243	243	0.5 L	2.5 L	D	40
	Fluorotoluenes	3	UN2388	II	3	.....	IB2, T4, TP1	150	202	242	242	242	5 L	60 L	B	40
	Forbidden materials. See § 173.21	Forbidden	UN1198	III	3, 8	.....	B1, IB3, T4, TP1	150	203	242	242	242	5 L	60 L	A	40
	Formaldehyde, solutions, flammable	3	UN2209	III	8	.....	IB3, T4, TP1	154	203	241	241	241	5 L	60 L	A	.....
	Formaldehyde, solutions, with not less than 25 percent formaldehyde	8	UN1779	II	8	.....	B2, B28, IB2, T7, TP2	154	202	242	242	242	1 L	30 L	A	40
	Formalin, see Formaldehyde, solutions	8	UN1779	II	8	.....	B2, B28, IB2, T7, TP2	154	202	242	242	242	1 L	30 L	A	40
	Formic acid	8	UN1779	II	8	.....	B2, B28, IB2, T7, TP2	154	202	242	242	242	1 L	30 L	A	40
	Fracturing devices, explosive, without detonators for oil wells	1.1D	UN0099	II	1.1D	.....	144, T11, TP1	None	62	.....	.....	.....	Forbidden	Forbidden	07	.....
	Fuel, aviation, turbine engine	3	UN1863	I	3	.....	144, T11, TP1	150	201	243	243	243	1 L	30 L	E	.....
	Fuel oil (No. 1, 2, 4, 5, or 6)	3	NA1983	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuel system components (including fuel control units (FCU), carburetors, fuel lines, fuel pumps) see Dangerous Goods in Apparatus or Dangerous Goods in Machinery.	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuminate of mercury (dry)	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuminate of mercury, wet, see Mercury fulminate, etc.	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuming gold	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuming mercury	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuming platinum	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuming silver	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fulminic acid	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fulminic chloride	Forbidden	UN1863	III	3	.....	144, IB2, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fumigant lading, see §§ 172.302(g), 173.9 and 176.76(h)	8	UN1780	II	8	.....	B2, IB2, T7, TP2	154	202	242	242	242	1 L	30 L	C	8, 40
	Fumigated transport vehicle or freight container see 173.9	8	UN1780	II	8	.....	B2, IB2, T7, TP2	154	202	242	242	242	1 L	30 L	C	8, 40
	Furaldehydes	6.1	UN1199	II	6.1, 3	.....	IB2, T7, TP2	153	202	243	243	243	5 L	60 L	A	.....
	Furan	3	UN2399	I	3	.....	T12, TP2, TP13	None	201	243	243	243	1 L	30 L	E	40
	Furfuryl alcohol	6.1	UN2874	III	6.1	.....	IB3, T4, TP1	153	203	241	241	241	60 L	220 L	A	52, 74
	Furfurylamine	3	UN2526	III	3, 8	.....	B1, IB3, T4, TP1	150	203	242	242	242	5 L	60 L	A	40
	Fuse, detonating, metal clad, see Cord, detonating, mild effect, metal clad	1.4G	UN0103	II	1.4G	.....	IB2, T7, TP2	None	62	.....	.....	.....	Forbidden	75 kg	06	.....
	Fuse, igniter, tubular metal clad	1.3G	UN0101	II	1.3G	.....	T12, TP2, TP13	None	62	.....	.....	.....	Forbidden	100 kg	07	.....
	Fuse, non-detonating instantaneous or quickmatch	1.4S	UN0105	II	1.4S	.....	IB3, T4, TP1	None	62	.....	.....	.....	Forbidden	50 kg	05	.....
	Fuse, safety	4.1	NA1325	II	4.1	.....	B1, IB3, T4, TP1	None	184	.....	.....	.....	15 kg	60 kg	B	.....
	Fusee (railway or highway)	3	UN1201	III	3	.....	IB2, T4, TP1	150	202	242	242	242	5 L	60 L	B	.....
	Fusel oil	3	UN1201	III	3	.....	B1, IB3, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuses, tracer, see Tracers for ammunition .....	.....	UN1201	III	3	.....	B1, IB3, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuses, combination, percussion and time, see Fuzes, detonating (UN0257, UN0367); Fuzes, igniting (UN0317, UN0368). ....	.....	UN1201	III	3	.....	B1, IB3, T4, TP1	150	203	242	242	242	60 L	220 L	A	.....
	Fuzes, detonating	1.1B	UN0106	II	1.1B	.....	IB2, T4, TP1	None	62	.....	.....	.....	Forbidden	75 kg	11	.....
	Fuzes, detonating	1.2B	UN0107	II	1.2B	.....	IB3, T4, TP1	None	62	.....	.....	.....	Forbidden	100 kg	11	.....
	Fuzes, detonating	1.4B	UN0257	II	1.4B	.....	IB2, T4, TP1	None	62	.....	.....	.....	Forbidden	75 kg	06	.....
	Fuzes, detonating	1.4S	UN0367	II	1.4S	.....	IB3, T4, TP1	None	62	.....	.....	.....	Forbidden	100 kg	05	.....
	Fuzes, detonating	1.1D	UN0408	II	1.1D	.....	IB2, T4, TP1	None	62	.....	.....	.....	Forbidden	75 kg	07	.....
	Fuzes, detonating, with protective features	1.2D	UN0409	II	1.2D	.....	IB3, T4, TP1	None	62	.....	.....	.....	Forbidden	100 kg	07	.....
	Fuzes, detonating, with protective features	1.4D	UN0410	II	1.4D		IB2, T4, TP1	None	62				Forbidden	75 kg	06	

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Num-bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)				(9) Quantity limitations		(10) Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	(8A)	(8B)	(8C)	(9A)	(9B)	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
	n-Heptaldehyde	3	UN3056	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Heptanes	3	UN1206	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	n-Heptene	3	UN2278	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Hexachloracetone	6.1	UN2661	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	B	12, 40	
	Hexachlorobenzene	6.1	UN2729	III	6.1	B3, IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A		
	Hexachlorobutadiene	6.1	UN2279	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	Hexachlorocyclopentadiene	6.1	UN2646	I	6.1	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40	
	Hexachlorophene	6.1	UN2875	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		
	Hexadecyltrichlorosilane	8	UN1781	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40	
	Hexadecenes	3	UN2458	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B		
	Hexaethyl tetraphosphate and compressed gas mixtures	2.3	UN1612		2.3	3	None	334	None	Forbidden	60 L	D	40	
	Hexaethyl tetraphosphate, liquid	6.1	UN1611	II	6.1	IB2, N76, T7, TP2	153	202	243	5 L	60 L	E	40	
	Hexaethyl tetraphosphate, solid	6.1	UN1611	II	6.1	IB8, IP2, IP4, N76	153	212	242	25 kg	100 kg	E	40	
	Hexafluoroacetone	2.3	UN2420			2.3, 8	None	304	314	Forbidden	Forbidden	D	40	
	Hexafluoroacetone hydrate, liquid	6.1	UN2552	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40	
	Hexafluoroacetone hydrate, solid	6.1	UN3436	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40	
	Hexafluoroethane, or Refrigerant gas R 116	2.2	UN2193			2.2	306	304	314	75 kg	150 kg	A		
	Hexafluorophosphoric acid	8	UN1782	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A		
	Hexafluoropropylene compressed or Refrigerant gas R 1216	2.2	UN1858			2.2	306	304	314	75 kg	150 kg	A		
	Hexaldehyde	3	UN1207	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Hexamethylene diisocyanate	6.1	UN2281	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	C	13, 40	
	Hexamethylene triperoxide diamine (dry)	Forbidden	UN2280	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12	
	Hexamethylenediamine, solid	8	UN1783	III	8	IB2, T7, TP2	None	202	242	1 L	30 L	A		
	Hexamethylenediamine solution	8	UN1783	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A		
	Hexamethylenimine	3	UN2493	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40	
	Hexamethylenetetramine	4.1	UN1328	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A		
Hexamethylol benzene hexanitrate	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E			
Hexanes	3	UN1208	II	3										
2,2',4,4',6,6'-Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden	UN1208	II	3										
Hexanitroazoxy benzene	Forbidden	UN1208	II	3										
N,N'-(hexanitrodiphenyl) ethylene dinitramine (dry)	Forbidden	UN1208	II	3										
Hexanitrodiphenyl urea	Forbidden	UN1208	II	3										
2,2',3',4',4',6'-Hexanitrodiphenylamine	Forbidden	UN1208	II	3										
Hexanitrodiphenylamine or Dipicrylamine or Hexyl	1.1D	UN0079	II	1.1D										
2,3',4,4',6,6'-Hexanitrodiphenylether	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1										
Hexanitroethane	Forbidden	UN0079	II	4.1							</			

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	(8C)	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(8C)	(9A)	(9B)	(10A)	(10B)
	Hydrogen and Methane mixtures, compressed	2.1	UN2034		2.1		306	302	302	302, 314, 315	Forbidden	150 kg	E	40, 57
	Hydrogen bromide, anhydrous	2.3	UN1048		2.3, 8	3, B14	None	304	304	314, 315	Forbidden	Forbidden	D	40
	Hydrogen chloride, anhydrous	2.3	UN1050		2.3, 8	3, B6	None	304	304	314, 315	Forbidden	Forbidden	D	40
	Hydrogen chloride, refrigerated liquid	2.3	UN2186		2.3, 8	3, B6	None	304	304	314, 315	Forbidden	Forbidden	B	40
	Hydrogen, compressed	2.1	UN1049		2.1		306	302	302	302, 314, 315	Forbidden	150 kg	E	40, 57
	Hydrogen cyanide, solution in alcohol with not more than 45 percent hydrogen cyanide	6.1	UN3294	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	314, 315	Forbidden	Forbidden	D	40
	Hydrogen cyanide, stabilized with less than 3 percent water	6.1	UN1051	I	6.1, 3	1, B35, B61, B65, B77, B82	None	195	244	244	Forbidden	Forbidden	D	40
	Hydrogen cyanide, stabilized, with less than 3 percent water and absorbed in a porous inert material	6.1	UN1614	I	6.1	5	None	195	None	None	Forbidden	Forbidden	D	25, 40
	Hydrogen fluoride, anhydrous	8	UN1052	I	8, 6.1	3, B7, B46, B71, B77, T10, TP2	None	163	243	243	Forbidden	Forbidden	D	40
	Hydrogen in a metal hydride storage system	2.1	UN3468		2.1	167	None	214	None	None	Forbidden	Forbidden	D	40
	Hydrogen iodide, anhydrous	2.3	UN2197		2.3	3, B14	None	304	314, 315	315	Forbidden	Forbidden	D	40
	Hydrogen iodide solution, see Hydroiodic acid, solution													
	Hydrogen peroxide and peroxyacetic acid mixtures, stabilized with acids, water and not more than 5 percent peroxyacetic acid	5.1	UN3149	II	5.1, 8	145, A2, A3, A6, B53, IB2, IP5, TP7, TP2, TP6, TP24	None	202	243	243	1 L	5 L	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2014	II	5.1, 8	12, B53, B80, B81, B85, IB2, TP7, TP2, TP6, TP24, TP37	None	202	243	243	Forbidden	Forbidden	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2014	II	5.1, 8	A2, A3, A6, B53, IB2, IP5, TP7, TP2, TP6, TP24, TP37	None	202	243	243	1 L	5 L	D	25, 66, 75
	Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2984	III	5.1	A1, IB2, IP5, T4, TP1, TP6, TP24, TP37	152	203	241	241	2.5 L	30 L	B	25, 66, 75
	Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions, stabilized with more than 60 percent hydrogen peroxide	5.1	UN2015	I	5.1, 8	12, B53, B80, B81, B85, T10, TP2, TP6, TP24, TP37	None	201	243	243	Forbidden	Forbidden	D	25, 66, 75
	Hydrogen, refrigerated liquid (cryogenic liquid)	2.1	UN1966		2.1	T75, TP5	None	316	318, 319	319	Forbidden	Forbidden	D	40
	Hydrogen selenide, anhydrous	2.3	UN2202		2.3, 2.1	1	None	192	245	245	Forbidden	Forbidden	D	40
	Hydrogen sulfate, see Sulfuric acid													
	Hydrogen sulfide	2.3	UN1053		2.3, 2.1	2, B9, B14	None	304	314, 315	315	Forbidden	Forbidden	D	40
	Hydrogendifluorides, n.o.s.	8	UN1740	II	8	IB8, IP2, IP4, N3, N34, T3, TP33	None	212	240	240	15 kg	50 kg	A	25, 40, 52
	Hydroquinone, solid			III	8	IB8, IP3, N3, N34, T1, TP33	154	213	240	240	25 kg	100 kg	A	25, 40, 52
	Hydroquinone solution	6.1	UN2682	III	6.1	IB8, IP3, T1, TP33	153	213	240	240	100 kg	200 kg	A	25, 40, 52
	Hydroxycarboxylic acid, see Fluorosilicic acid													
	Hydroxylamine iodide	6.1	UN3435	III	6.1	IB3, T4, TP1	153	203	241	241	60 L	220 L	A	25, 40, 52
	Hydroxylamine iodide	Forbidden												
	Hydroxylamine sulfate	8	UN2865	III	8	IB8, IP3, T1, TP33	154	213	240	240	25 kg	100 kg	A	25, 40, 52

Hypochlorite solutions	8	UN1791	II	8	A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24	154	202	242	1 L	30 L	B	26
Hypochlorites, inorganic, n.o.s.	5.1	UN3212	III	8	IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26
Hyponitrous acid	Forbidden		II	5.1	A9, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	4, 48, 52, 56, 58, 69, 106, 116, 118
Igniter fuse, metal clad, see Fuse, igniter, tubular, metal clad												
Igniters	1.1G	UN0121	II	1.1G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.2G	UN0314	II	1.2G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.3G	UN0315	II	1.3G		None	62	None	Forbidden	Forbidden	07	
Igniters	1.4G	UN0325	II	1.4G		None	62	None	Forbidden	75 kg	06	
Igniters	1.4S	UN0454	II	1.4S		None	62	None	25 kg	100 kg	05	
3,3'-Iminodipropylamine	8	UN2289	III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	
Infectious substances, affecting animals only	6.2	UN2900		6.2	A81, A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40
Infectious substances, affecting humans	6.2	UN2814		6.2	A81, A82	134	196	None	50 mL or 50 g	4 L or 4 kg	B	40
Inflammable, see Flammable												
Initiating explosives (dry)	Forbidden											
Inositol hexanitrate (dry)	2.2	UN1988		2.2		306	304	314, 315	75 kg	150 kg	A	
Insecticide gases, n.o.s.	2.1	UN3354		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
Insecticide gases, flammable, n.o.s.	2.3	UN3355		2.3	1	None	192	245	Forbidden	Forbidden	D	40
Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone A	2.3	UN3355		2.3	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone B	2.3	UN3355		2.3	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	
Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone C	2.3	UN3355		2.3	4	None	302, 305	314, 315	Forbidden	Forbidden	D	
Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone D	2.3	UN3355		2.3	3	None	193, 334	245	Forbidden	Forbidden	D	40
Insecticide gases, toxic, n.o.s.	2.3	UN1967		2.3								
Inulin trinitrate (dry)	Forbidden											
Iodine azide (dry)	8	UN1792	II	8	B6, IB8, IP2, IP4, N41, T7, TP2	None	212	240	Forbidden	50 kg	D	40, 66, 74, 89, 90
Iodine monochloride												
Iodine pentafluoride	5.1	UN2495	I	5.1, 6.1, 8		None	205	243	Forbidden	Forbidden	D	25, 40, 52, 66, 90
2-Iodobutane	3	UN2390	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Iodomethylopropanes	3	UN2391	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Iodopropanes	3	UN2392	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Iodoxy compounds (dry)	Forbidden											
Indium nitratopentamine indium nitrate	Forbidden											
Iron chloride, see Ferric chloride												
Iron oxide, spent, or Iron sponge, spent obtained from coal gas purification	4.2	UN1376	III	4.2	B18, IB8, IP3, T1, TP33	None	213	240	Forbidden	Forbidden	E	
Iron pentacarbonyl	6.1	UN1994	I	6.1, 3	1, B9, B14, B30, B72, B77, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
Iron sesquichloride, see Ferric chloride												
Irritating material, see Tear gas substances, etc												
Isobutane see also Petroleum gases, liquefied	2.1	UN1969		2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	40
Isobutanol or Isobutyl alcohol	3	UN1212	III	3	B1, IB3, T2, TP1	150	202	242	60 L	220 L	A	
Isobutyl acetate	3	UN1213	III	3	IB2, T4, TP1	150	203	242	5 L	60 L	B	
Isobutyl acrylate, stabilized	3	UN2527	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Isobutyl alcohol, see Isobutanol												
Isobutyl aldehyde, see Isobutyraldehyde												
Isobutyl chloroformate	6.1	NA2742	I	6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	1 L	30 L	A	12, 13, 22, 25, 40, 48, 100
Isobutyl formate	3	UN2393	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Isobutyl isobutyrate	3	UN2528	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel slow- age	
							Excep- tions	Non- bulk	Bulk	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
+	Isobutyl isocyanate	3	UN2486	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP27	None	226	244	Forbidden	Forbidden	D	40
	Isobutyl methacrylate, stabilized	3	UN2283	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isobutyl propionate	3	UN2394	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	B	.....
	Isobutylamine	3	UN1214	III	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
	Isobutylene <i>see also</i> Petroleum gases, liquefied	2.1	UN1055	.....	2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	40
	Isobutyraldehyde or Isobutyl aldehyde	3	UN2045	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
	Isobutyric acid	3	UN2529	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	.....
	Isobutyronitrile	3	UN2284	II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	E	40
	Isobutyl chloride	3	UN2395	II	3, 8	IB1, T7, TP2	150	202	243	1 L	5 L	C	40
	Isocyanates, flammable, toxic, n.o.s. or Isocyanate solutions, flammable, toxic, n.o.s. <i>flash point less than 23 degrees C.</i>	3	UN2478	II	3, 6.1	5, A3, A7, IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	D	40
G	.....	.....	.....	III	3, 6.1	5, A3, A7, IB3, T7, TP1, TP13, TP28	150	203	242	60 L	220 L	A	.....
	Isocyanates, toxic, flammable, n.o.s. or Isocyanate solutions, toxic, flammable, n.o.s., <i>flash point not less than 23 degrees C but not more than 61 degrees C and boiling point less than 300 degrees C.</i>	6.1	UN3080	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	25, 40, 48
	Isocyanates, toxic, n.o.s. or Isocyanate solutions, toxic, n.o.s., <i>flash point more than 61 degrees C and boiling point less than 300 degrees C.</i>	6.1	UN2206	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	E	25, 40, 48
	.....	.....	.....	III	6.1	IB3, T7, TP1, TP13, TP28	153	203	241	60 L	220 L	E	25, 40, 48
	Isocyanatobenzotrifluorides	6.1	UN2285	II	6.1, 3	5, IB2, T7, TP2	153	202	243	5 L	60 L	D	25, 40, 48
	Isheptenes	3	UN2287	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isorexenes	3	UN2288	II	3	IB2, IP8, T11, TP1	150	202	242	5 L	60 L	E	.....
	.....	.....	.....	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isocetane, <i>see</i> Octanes	3	UN1216	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
													
+	Isocetanes	3	UN2371	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	Isocetanes, <i>see</i> Pentane	6.1	UN2290	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	B	.....
	Isopentanoic acid, <i>see</i> Corrosive liquids, n.o.s.	8	UN2289	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	40
	Isopentenes	3	UN1218	I	3	T11, TP2	150	201	243	1 L	30 L	E	.....
	Isoprene, stabilized	3	UN1219	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropanol or Isopropyl alcohol	3	UN1219	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropenyl acetate	3	UN2403	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropenylbenzene	3	UN2303	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropyl acetate	3	UN1220	II	3	IB2, T4, TP1	150	202	242	25 kg	100 kg	A	.....
	.....	8	UN1793	III	8	IB2, T4, TP1	154	213	240	.....	.....	.....	.....
+	Isopropyl acid phosphite .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopropyl alcohol, <i>see</i> Isopropanol	3	UN2405	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl butyrate	3	UN2947	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl chloroacetate .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopropyl chloroformate	6.1	UN2407	I	6.1, 3, 8	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	40
	Isopropyl 2-chloropropionate	3	UN2934	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropyl isobutyrate	3	UN2406	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropyl isocyanate	3	UN2483	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
													
	Isopropyl mercaptan, <i>see</i> Propanethiols	3	UN1222	II	3	IB89	150	202	None	5 L	60 L	D	.....
+	Isopropyl nitrate .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopropyl phosphoric acid, <i>see</i> Isopropyl acid phosphate .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Isopropyl propionate	3	UN2409	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
	Isopropylamine	3	UN1221	I	3, 8	T11, TP2	None	201	243	0.5 L	2.5 L	E	.....
	Isopropylbenzene	3	UN1918	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Isopropylcumyl hydroperoxide, with more than 72 percent in solution	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
													
													
													
													

		4.1	UN2907	II	4.1	IB6, IP2, N85	None	212	None	15 kg	50 kg	E	28, 36
	Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate.	4.1	UN3251	III	4.1	66, IB8	151	213	240	Forbidden	Forbidden	D	12
	Isosorbide-5-mononitrate	Forbidden											
	Isotiocyanic acid	1.1D	NA0124	II	1.1D	55, 56	None	62	None	Forbidden	Forbidden	07	
D	Jet fuel, see Fuel aviation, turbine engine	1.4D	NA0494	II	1.4D	55, 56	None	62	None	Forbidden	Forbidden	06	
D	Jet perforating guns, charged oil well, with detonator	1.1D	UN0124	II	1.1D	55, 114	None	62	None	Forbidden	Forbidden	06	
	Jet perforating guns, charged oil well, without detonator	1.4D	UN0494	II	1.4D								
	Jet perforators, see Charges, shaped, etc												
	Jet tappers, without detonator, see Charges, shaped, etc												
	Jet thrust igniters, for rocket motors or Jato, see Igniters												
	Jet thrust unit (Jato), see Rocket motors												
	Kerosene	3	UN1223	III	3	144, B1, IB3, T2, TP2	150	203	242	60 L	220 L	A	
G	Ketones, liquid, n.o.s.	3	UN1224	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Krypton, compressed	2.2	UN1056		2.2	T75, TP5	306	302	None	75 kg	150 kg	A	
	Krypton, refrigerated liquid (cryogenic liquid)	2.2	UN1970		2.2		320	None		50 kg	500 kg	B	
	Lacquer base or lacquer chips, nitrocellulose, dry, see Nitrocellulose, etc. (UN 2557)												
	Lacquer base or lacquer chips, plastic, wet with alcohol or solvent, see Nitrocellulose (UN2059, UN2555, UN2556, UN2557) or Paint etc.(UN1263).												
	Lead acetate	6.1	UN1616	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead arsenates	6.1	UN1617	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead arsenites	6.1	UN1618	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead azide (dry)	Forbidden	UN0129	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead azide, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	1.1A											
	Lead compounds, soluble, n.o.s.	6.1	UN2291	III	6.1	138, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead cyanide	6.1	UN1620	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Lead dioxide	5.1	UN1872	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Lead dross, see Lead sulfate, with more than 3 percent free acid												
	Lead nitrate	5.1	UN1469	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Lead nitroresorcinate (dry)	Forbidden	UN1470	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Lead perchlorate, solid	5.1	UN3408	III	5.1, 6.1	IB2, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58
	Lead perchlorate, solution			II	5.1, 6.1	IB2, T4, TP1	152	202	243	1 L	5 L	A	56, 58
	Lead peroxide, see Lead dioxide												
	Lead phosphite, dibasic	4.1	UN2989	II	4.1	IB8, IP2, IP4, T3, TP33	None	212	240	5 kg	25 kg	B	34
				III	4.1	IB8, IP3, T1, TP33	151	213	240	15 kg	50 kg	B	34
	Lead picrate (dry)	Forbidden											
	Lead styphnate (dry)	Forbidden	UN0130	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead styphnate, wetted or Lead trinitroresorcinate, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	1.1A											
	Lead sulfate with more than 3 percent free acid	8	UN1794	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
	Lead trinitroresorcinate, see Lead styphnate, etc												
	Life-saving appliances, not self initiating containing dangerous goods as equipment	9	UN3072		None		None	219	None	No limit	No limit	A	
	Life-saving appliances, self inflating	9	UN2990		None		None	219	None	No limit	No limit	A	
	Lighter replacement cartridges containing liquefied petroleum gases (and similar devices, each not exceeding 65 grams), see Lighters or lighter refills etc. containing flammable gas.												
	Lighters, fuse	1.4S	UN0131	II	1.4S		None	62	None	25 kg	100 kg	05	
	Lighters or lighter refills containing flammable gas	2.1	UN1057		2.1	N10	None	21, 308	None	1 kg	15 kg	B	40
G	Lime, unslaked, see Calcium oxide												
	Liquefied gas, flammable, n.o.s.	2.1	UN3161		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
G	Liquefied gas, n.o.s.	2.2	UN3163		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
G	Liquefied gas, oxidizing, n.o.s.	2.2	UN3157		2.2, 5.1	A14	306	304	314, 315	75 kg	150 kg	D	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G I	Liquefied gas, toxic, corrosive, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3308		2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3308		2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3308		2.3, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3308		2.3, 8	4	None	304	314, 315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3309		2.3, 2.1, 8	1	None	192	245	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas toxic, flammable, corrosive, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3309		2.3, 2.1, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3309		2.3, 2.1, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3309		2.3, 2.1, 8	4	None	304	314, 315	Forbidden	Forbidden	D	17, 40
G	Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3160		2.3, 2.1	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3160		2.3, 2.1	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3160		2.3, 2.1	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3160		2.3, 2.1	4	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3162		2.3	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3162		2.3	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3162		2.3	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3162		2.3	4	None	304	314, 315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3310		2.3, 5.1, 8	1	None	192	245	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3310		2.3, 5.1, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3310		2.3, 5.1, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3310		2.3, 5.1, 8	4	None	304	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3307		2.3, 5.1	1	None	192	245	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3307		2.3, 5.1	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3307		2.3, 5.1	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G	Liquefied gas, toxic, oxidizing, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3307		2.3, 5.1	4	None	304	314, 315	Forbidden	Forbidden	D	40
	Liquefied gases, non-flammable charged with nitrogen, carbon dioxide or air	2.2	UN1058		2.2		306	304	None	75 kg	150 kg	A	
	Liquefied hydrocarbon gas, see Hydrocarbon gas mixture, liquefied, n.o.s.												
	Liquefied natural gas, see Methane, etc. (UN 1972)												
	Liquefied petroleum gas see Petroleum gases, liquefied												
	Lithium	4.3	UN1415	I	4.3	A7, A19, IB4, IP1, N45	None	211	244	Forbidden	Forbidden	E	52
	Lithium acetylide ethylenediamine complex, see Water reactive solid etc.												
	Lithium alkyls, liquid	4.2	UN2445	I	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	
	Lithium alkyls, solid	4.2	UN3493	I	4.2, 4.3	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	

Lithium aluminum hydride	4.3	UN1410	I	4.3	A19	None	211	242	Forbidden	15 kg	E	52
Lithium aluminum hydride, ethereal	4.3	UN1411	I	4.3, 3	A2, A3, A11, N34	None	201	244	Forbidden	1 L	D	40
Lithium batteries, contained in equipment	9	UN3091	II	9	29, A54, A55, A102, A104	185	185	None	5 kg	5 kg	A	
Lithium batteries packed with equipment	9	UN3091	II	9	29, A54, A55, A101, A103	185	185	None	5 kg gross	35 kg gross	A	
Lithium battery	9	UN3090	II	9	29, A54, A55, A101, A103	185	185	None	5 kg gross	35 kg gross	A	
Lithium borohydride	4.3	UN1413	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium ferrosilicon	4.3	UN2830	I	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	40, 85, 103
Lithium hydride	4.3	UN1414	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Lithium hydride, fused solid	4.3	UN2805	II	4.3	A8, A19, A20, IB4, T3, TP33	151	212	241	15 kg	50 kg	E	52
Lithium hydroxide	8	UN2680	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
Lithium hydroxide, solution	8	UN2679	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	29
Lithium hypochlorite, dry with more than 39% available chlorine (8.8% available oxygen) or Lithium hypochlorite mixtures, dry with more than 39% available chlorine (8.8% available oxygen).	5.1	UN1471	II	5.1	IB3, T4, TP2	154	203	241	5 L	60 L	A	29, 96
					A9, IB8, IP2, IP4, N34	152	212	240	5 kg	25 kg	A	4, 48, 52, 56, 58, 69, 106, 116
Lithium in cartridges, see Lithium												
Lithium nitrate	5.1	UN2722	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Lithium nitride	4.3	UN2806	I	4.3	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg	E	
Lithium peroxide	5.1	UN1472	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	None	5 kg	25 kg	A	13, 52, 66, 75
Lithium silicon	4.3	UN1417	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	A	85, 103
LNG, see Methane etc. (UN 1972)												
London purple	6.1	UN1621	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
LPG, see Petroleum gases, liquefied												
Lye, see Sodium hydroxide, solutions												
Magnesium alkyls	4.2	UN3053	I	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Magnesium aluminum phosphide	4.3	UN1419	I	4.3, 6.1	A19, N34, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
Magnesium arsenate	6.1	UN1622	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Magnesium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
Magnesium bromate	5.1	UN1473	II	5.1	A1, IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium chlorate	5.1	UN2723	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium diamide	4.2	UN2004	II	4.2	A8, A19, A20, IB6, T3, TP33	None	212	241	15 kg	50 kg	C	
Magnesium diphenyl	4.2	UN2005	I	4.2	T21, TP7, TP33	None	187	244	Forbidden	Forbidden	C	
Magnesium dross, wet or hot	Forbidden											
Magnesium fluorosilicate	6.1	UN2853	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Magnesium granules, coated, particle size not less than 149 microns	4.3	UN2950	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	240	25 kg	100 kg	A	52
Magnesium hydride	4.3	UN2010	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Magnesium or Magnesium alloys with more than 50 percent magnesium in pellets, turnings or ribbons.	4.1	UN1869	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	39, 52, 53, 74, 101
Magnesium nitrate	5.1	UN1474	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Magnesium perchlorate	5.1	UN1475	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Magnesium peroxide	5.1	UN1476	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
Magnesium phosphide	4.3	UN2011	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Magnesium, powder or Magnesium alloys, powder	4.3	UN1418	I	4.3, 4.2	A19, B56	None	211	244	Forbidden	15 kg	A	39, 52
			II	4.3, 4.2	A19, B56, IB5, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	39, 52
			III	4.3, 4.2	A19, B56, IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	A	39, 52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	(3)	(4)	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Magnesium scrap, see Magnesium, etc. (UN 1869)	4.3	UN2624	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	B	85, 103
	Magnesium silicide	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Magnetized material, see § 173.21												
	Maleic anhydride	8	UN2215	III	8	T4, TP3	None	213	240	Forbidden	Forbidden	A	12
	Maleic anhydride, molten	6.1	UN2647	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Malononitrile	4.2	UN2210	III	4.2	57, A1, A19, IB6, T1, TP33	None	213	242	25 kg	100 kg	A	34
	Mancozeb (manganese ethylenedisithiocarbamate complex with zinc) see Maneb	4.3	UN2968	III	4.3	54, A1, A19, IB8, IP4, T1, TP33	151	213	242	25 kg	100 kg	B	34, 52
	Maneb or Maneb preparations with not less than 60 percent maneb	5.1	UN2724	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Maneb stabilized or Maneb preparations, stabilized against self-heating	4.1	UN1330	III	4.1	A1, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	
	Manganese nitrate	Forbidden	UN0133	II	1.1D	121	None	62	None	Forbidden	Forbidden	10	
	Manganese resinate	Forbidden											
	Mannitol hexanitrate	4.1	UN2254	III	4.1		186	186	None	Forbidden	Forbidden	A	
	Mannitol hexanitrate (dry)	4.1	UN1944	III	4.1		186	186	None	25 kg	100 kg	A	
	Mannitol hexanitrate, wetted or Nitronamnit, wetted with not less than 40 percent water, or mixture of alcohol and water, by mass.	4.1	UN1331	III	4.1		186	186	None	Forbidden	Forbidden	B	
	Marine pollutants, liquid or solid, n.o.s., see Environmentally hazardous substances, liquid or solid, n.o.s.	4.1	UN1945	III	4.1		186	186	None	25 kg	100 kg	B	
	Matches, block, see Matches, 'strike anywhere'	3	UN3248	II	3, 6.1	36, IB2	150	202	None	1 L	5 L	B	40
	Matches, fusee	6.1	UN1851	III	3, 6.1	36, IB3	150	203	None	5 L	5 L	A	
	Matches, safety (book, card or strike on box)	4.1	UN1851	III	6.1	36	153	202	243	5 L	5 L	C	40
	Matches, strike anywhere	4.1	UN1331	III	6.1	36	153	203	241	5 L	5 L	C	40
	Matches, wax, Vesta	4.1	UN3249	III	6.1	36, T3, TP33	153	212	None	5 kg	5 kg	C	40
	Matting acid, see Sulfuric acid					36, T1, TP33	153	213	None	5 kg	5 kg	C	40
	Medicine, liquid, flammable, toxic, n.o.s.		UN3336	I	3	T11, TP2	150	201	243	1 L	30 L	E	95
	Medicine, liquid, toxic, n.o.s.			II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	95
	Medicine, solid, n.o.s.			III	3	B1, B52, IB3, T4, TP1, TP29	150	203	241	60 L	220 L	B	95
	Mercuric chloride	3	UN1228	II	3, 6.1	IB2, T11, TP2, TP27	None	202	243	Forbidden	60 L	B	40, 95
	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s.			III	3, 6.1	A6, B1, IB3, T7, TP1, TP28	150	203	242	5 L	220 L	A	40, 95
	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixture, liquid, flammable, n.o.s.			II	6.1, 3	A6, IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	C	40, 121
	Mercaptans, liquid, toxic, flammable, n.o.s. or Mercaptan mixtures, liquid, toxic, flammable, n.o.s., flash point not less than 23 degrees C.	6.1	UN3071	II	6.1, 3	IB8, IP2, IP4, T3, TP33	None	62	None	Forbidden	75 kg	09	
	5-Mercaptotetrazol-1-acetic acid	1.4C	UN0448	II	1.4C		153	212	242	25 kg	100 kg	A	
	Mercuric arsenate	6.1	UN1623	II	6.1		153	212	242	25 kg	100 kg	A	
	Mercuric chloride	6.1	UN1624	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercuric compounds, see Mercury compounds, etc												
	Mercuric nitrate	6.1	UN1625	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Mercuric potassium cyanide	6.1	UN1626	I	6.1	N73, T3, TP33	None	211	242	5 kg	50 kg	A	52
+	Mercuric thiocyanate, see Mercury thiocyanate												
	Mercuric sulfocyanate, see Mercury thiocyanate												
	Mercuric sulfide, see Mercury sulfide												
	Mercuric azide	Forbidden											
	Mercurous compounds, see Mercury compounds, etc												
	Mercurous nitrate	6.1	UN1627	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
A W	Mercury	8	UN2809	III	8		164	164	240	35 kg	35 kg	B	40, 97

Mercury acetate	6.1	UN1629	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury acetylde	Forbidden	UN1630	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury ammonium chloride	3	UN2778	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
Mercury based pesticides, liquid, flammable, toxic, flash point not less than 23 degrees C	.....	.....	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Mercury based pesticides, liquid, toxic	6.1	UN3012	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....	.....	.....	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....	.....	.....	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Mercury based pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3011	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....	.....	.....	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....	.....	.....	III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Mercury based pesticides, solid, toxic	6.1	UN2777	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
.....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Mercury benzoate	6.1	UN1631	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury bromides	6.1	UN1634	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury compounds, liquid, n.o.s.	6.1	UN2024	I	6.1	IB2, IP3, T1, TP33	None	201	243	1 L	30 L	B	40
.....	.....	.....	II	6.1	IB3, IP1, T6, TP33	153	203	241	5 L	60 L	B	40
Mercury compounds, solid, n.o.s.	6.1	UN2025	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	.....
.....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
Mercury contained in manufactured articles	8	UN2809	III	8	IB8, IP2, IP4, T3, TP33	None	164	None	No limit	No limit	B	40, 97
Mercury cyanide	6.1	UN1636	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
Mercury fulminate, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass.	1.1A	UN0135	II	1.1A	111, 117, TP33	None	62	None	Forbidden	Forbidden	12	.....
Mercury gluconate	6.1	UN1637	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury iodide	6.1	UN1638	II	6.1	IB2, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury iodide aquabasic ammonobasic (iodide of Millon's base)	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercury nitride	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercury nucleate	6.1	UN1639	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury oleate	6.1	UN1640	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury oxide	6.1	UN1641	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury oxycyanide	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercury oxycyanide, desensitized	6.1	UN1642	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52, 91
Mercury potassium iodide	6.1	UN1643	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury salicylate	6.1	UN1644	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury sulfates	6.1	UN1645	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mercury thiocyanate	6.1	UN1646	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Mesityl oxide	3	UN1229	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Metal carbonyls, liquid, n.o.s.	6.1	UN3281	I	6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....			II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
	Metal carbonyls, solid, n.o.s.	6.1	UN3466	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	B	40
	Metal catalyst, dry	4.2	UN2881	I	4.2	N34, T21, TP7, TP33	None	187	None ...	Forbidden	Forbidden	C	
				II	4.2	IB6, IP2, N34, T3, TP33	None	187	242	Forbidden	50 kg	C	
				III	4.2	IB8, IP3, N34, T1, TP33	None	187	241	25 kg	100 kg	C	
	Metal catalyst, wetted with a visible excess of liquid	4.2	UN1378	II	4.2	A2, A8, IB1, N34, T3, TP33	None	212	None ...	Forbidden	50 kg	C	
	Metal hydrides, flammable, n.o.s.	4.1	UN3182	II	4.1	A1, IB4, T3, TP33	151	212	240	15 kg	50 kg	E	
				III	4.1	A1, IB4, T1, TP33	151	213	240	25 kg	100 kg	E	
G				I	4.3	A19, N34, N40	None	211	242	Forbidden	15 kg	D	52
	Metal hydrides, water reactive, n.o.s.	4.3	UN1409	II	4.3	A19, IB4, N34, N40, T3, TP33	151	212	242	15 kg	50 kg	D	52
				II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	
	Metal powder, self-heating, n.o.s.	4.2	UN3189	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
				II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	40
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	40
	Metaldehyde	4.1	UN1332	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Metallic substance, water-reactive, n.o.s.	4.3	UN3208	I	4.3	A7, IB4	None	211	242	Forbidden	15 kg	E	40
				II	4.3	A7, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	E	40
				III	4.3	A7, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	E	40
G				I	4.3, 4.2								

+ I	Methanol	3	UN1230	II	3, 6.1	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
D	Methanol	3	UN1230	II	3	IB2, T7, TP2	150	202	242	1 L	60 L	B	40
	<i>Methazolic acid</i>	Forbidden											
	4-Methoxy-4-methylpentan-2-one	3	UN2293	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1-Methoxy-2-propanol	3	UN3092	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
+	Methoxymethyl isocyanate	3	UN2605	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Methyl acetate	3	UN1231	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl acetylene and propadiene mixtures, stabilized	2.1	UN1060		2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
	Methyl acrylate, stabilized	3	UN1919	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	
	<i>Methyl alcohol, see Methanol</i>												
	Methyl allyl chloride	3	UN2554	II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	E	
	<i>Methyl aryl ketone, see Amyl methyl ketone</i>												
	Methyl bromide	2.3	UN1062		2.3	3, B14, T50	None	193	314, 315	Forbidden	Forbidden	D	40
	<i>Methyl bromide and chloropicrin mixtures with more than 2 percent chloropicrin, see Chloropicrin and methyl bromide mixtures.</i>												
	<i>Methyl bromide and chloropicrin mixtures with not more than 2 percent chloropicrin, see Methyl bromide.</i>												
	Methyl bromide and ethylene dibromide mixtures, liquid	6.1	UN1647	I	6.1	2, B9, B14, B32, B74, N65, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	C	40
	Methyl bromoacetate	6.1	UN2643	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
	2-Methylbutanal	3	UN3371	II	3	3B2, T4, TP1	150	202	242	5 L	60 L	B	
	2-Methyl-1-butene	3	UN2459	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	2-Methyl-2-butene	3	UN2480	II	3	IB2, IP8, T7, TP1	None	202	242	5 L	60 L	E	
	3-Methyl-1-butene	3	UN2561	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	Methyl tert-butyl ether	3	UN2398	I	3	T11, TP2	150	202	242	5 L	60 L	E	
	Methyl butyrate	3	UN1237	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	B	
	Methyl chloride, or Refrigerant gas R 40	2.1	UN1063		2.1	T50	306	304	314, 315	5 kg	100 kg	D	40
	<i>Methyl chloride and chloropicrin mixtures, see Chloropicrin and methyl chloride mixtures.</i>												
	Methyl chloride and methylene chloride mixtures	2.1	UN1912		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
	Methyl chloroacetate	6.1	UN2295	I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	D	
	<i>Methyl chloroacetate, see Methyl chloroformate</i>												
	<i>Methyl chloroform, see 1,1,1-Trichloroethane</i>												
	Methyl chloroformate	6.1	UN1238	I	6.1, 3, 8	1, B9, B14, B30, B72, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	21, 40, 100
	Methyl chloromethyl ether	6.1	UN1239	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Methyl 2-chloropropionate	3	UN2933	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl dichloroacetate	6.1	UN2299	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	<i>Methyl ethyl ether, see Ethyl methyl ether</i>												
	Methyl ethyl ketone, see Ethyl methyl ketone												
	<i>Methyl ethyl ketone peroxide, in solution with more than 9 percent by mass active oxygen</i>	Forbidden											
	2-Methyl-5-ethylpyridine	6.1	UN2300	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl fluoride, or Refrigerant gas R 41	2.1	UN2454		2.1		306	304	314, 315	Forbidden	150 kg	E	40
	Methyl formate	3	UN1243	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	2-Methyl-2-heptanethiol	6.1	UN3023	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 102
	Methyl iodide	6.1	UN2644	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40
	Methyl isobutyl carbinol	3	UN2053	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl isobutyl ketone	3	UN1245	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Methyl isobutyl ketone peroxide, in solution with more than 9 percent by mass active oxygen</i>	Forbidden											
	Methyl isocyanate	6.1	UN2480	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Methyl isopropenyl ketone, stabilized	3	UN1246	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Methyl isothiocyanate	6.1	UN2477	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	
	Methyl isovalerate	3	UN2400	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl magnesium bromide, in ethyl ether	4.3	UN1928	I	4.3, 3	IB2, T4, TP1	None	201	243	Forbidden	1 L	D	
	Methyl mercaptan	2.3	UN1064		2.3, 2.1	3, B7, B9, B14, T50	None	304	314, 315	Forbidden	Forbidden	D	40
	Methyl mercaptopropionaldehyde, see Thia-4-pentanal												
	Methyl methacrylate monomer, stabilized	3	UN1247	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Methyl nitramine (dry)	Forbidden											
	Methyl nitrate	Forbidden											
	Methyl nitrite	Forbidden											
	Methyl norbornene dicarboxylic anhydride, see Corrosive liquids, n.o.s.												
	Methyl orthosilicate	6.1	UN2606	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	E	40
	D	Methyl phosphonic dichloride	6.1	NA9206	I	6.1, 8	2, B9, B14, B32, B74, N34, N43, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C
Methyl phosphonothioic dichloride, anhydrous, see Corrosive liquid, n.o.s.													
D	Methyl phosphonous dichloride, pyrophoric liquid	6.1	NA2845	I	6.1, 4.2	2, B9, B14, B16, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	18
D	Methyl picric acid (heavy metal salts of)	Forbidden											
	Methyl propionate	3	UN1248	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl propyl ether	3	UN2612	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	40
	Methyl propyl ketone	3	UN1249	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl sulfate, see Dimethyl sulfate												
	Methyl sulfide, see Dimethyl sulfide												
	Methyl trichloroacetate	6.1	UN2533	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl trimethylol methane trinitrate	Forbidden								Forbidden	Forbidden	B	40
	Methyl vinyl ketone, stabilized	6.1	UN1251	I	6.1, 3, 8	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden		
	Methylal	3	UN1234	II	3	IB2, IP8, T7, TP2	None	202	242	5 L	60 L	E	
	Methylamine, anhydrous	2.1	UN1061		2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
	D	Methylamine, aqueous solution											
Methylamine dinitramine and dry salts thereof		3	UN1235	II	3, 8	B1, IB2, T7, TP1	150	202	243	1 L	5 L	E	135
Methylamine nitroform		Forbidden											
Methylamine perchlorate (dry)		Forbidden											
Methylamyl acetate		3	UN1233	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
N-Methylaniline		6.1	UN2294	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
alpha-Methylbenzyl alcohol, liquid		6.1	UN2937	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
alpha-Methylbenzyl alcohol, solid		6.1	UN3438	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
3-Methylbutan-2-one		3	UN2397	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
N-Methylbutylamine		3	UN2945	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
Methylchlorosilane		2.3	UN2534		2.3, 2.1, 8	2, B9, B14, N34	None	226	314, 315	Forbidden	Forbidden	D	17, 40
D		Methylcyclohexane	3	UN2296	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B
	Methylcyclohexanols, flammable	3	UN2617	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylcyclohexanone	3	UN2297	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methylcyclopentane	3	UN2298	I	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methylchloroarsine	6.1	NA1556	I	6.1	2, T20, TP4, TP12, TP13, TP38, TP45	None	192	None	Forbidden	Forbidden	D	40

Methyldichlorosilane	4.3	UN1242	I	4, 3, 8, 3.	A2, A3, A7, B6, B77, N34, T10, TP2, TP7, TP13	None	201	243	Forbidden	1 L	21, 28, 40, 49, 100
Methylene chloride, see Dichloromethane	Forbidden										
Methylene glycol dinitrate	3	UN2301	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	
2-Methylfuran	Forbidden										
a-Methylglucoside tetranitrate	3	UN2302	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	
a-Methylglycerol trinitrate	3	UN1244	I	6.1, 3, 8.	1, B7, B9, B14, B30, B72, B77, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	21, 40, 49, 100
5-Methylhexan-2-one	6.1										
Methylhydrazine											
4-Methylmorpholine or n-methylmorpholine	3	UN2535	II	3, 8	B6, B8, T7, TP1	150	202	243	1 L	5 L	40
Methylpentadienes	3	UN2461	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	
2-Methylpentan-2-ol	3	UN2560	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	
Methylpentanes, see Hexanes											
Methylphenyldichlorosilane	8	UN2437	II	8	IB2, T7, TP2, TP13	154	202	242	1 L	30 L	40
1-Methylpiperidine	3	UN2399	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	
Methyltetrahydrofuran	3	UN2536	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	
Methyltrichlorosilane	3	UN1250	I	3, 8	A7, B6, B77, N34, T11, TP2, TP13	None	201	243	Forbidden	2.5 L	40
alpha-Methylvaleraldehyde	3	UN2367	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	
Mine rescue equipment containing carbon dioxide, see Carbon dioxide											
Mines with bursting charge	1.1F	UN0136	II	1.1F					Forbidden	Forbidden	
Mines with bursting charge	1.1D	UN0137	II	1.1D					Forbidden	Forbidden	
Mines with bursting charge	1.2D	UN0138	II	1.2D					Forbidden	Forbidden	
Mines with bursting charge	1.2F	UN0294	II	1.2F					Forbidden	Forbidden	
Mixed acid, see Nitrating acid, mixtures etc											
Mobility aids, see Battery powered equipment or Battery powered vehicle											
Model rocket motor	1.4C	NA0276	II	1.4C	51	None	62	None	Forbidden	75 kg	
Model rocket motor	1.4S	NA0323	III	1.4S	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	40
Molybdenum pentachloride	8	UN2508		8							
Monochloroacetone (unstabilized)	Forbidden										
Monochloroethylene, see Vinyl chloride, stabilized											
Monothalamine, see Ethanolamine, solutions											
Monothalamine, see Ethylamine											
Morpholine	8	UN2054	I	8, 3	A6, T10, TP2	None	201	243	0.5 L	2.5 L	
Morpholine, aqueous, mixture, see Corrosive liquids, n.o.s.											
Motor fuel anti-knock compounds see Motor fuel anti-knock mixtures											
Motor fuel anti-knock mixtures	6.1	UN1649	I	6.1, 3	14, 151, B9, B90, T14, TP2, TP13	None	201	244	Forbidden	30 L	25, 40
Motor spirit, see Gasoline											
Muriatic acid, see Hydrochloric acid											
Musk xylene, see 5-tert-Butyl-2,4,6-trinitro-m-xylene											
Naphtin see Petroleum distillates n.o.s.											
Naphthalene, crude or Naphthalene, refined	4.1	UN1334	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	
Naphthalene diazonide	Forbidden										
beta-Naphthylamine	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
beta-Naphthylamine, solid	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
beta-Naphthylamine solution	6.1	UN3411	III	6.1	IB2, T7, TP2	153	203	243	5 L	60 L	
alpha-Naphthylamine	6.1	UN2077	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	
Naphthalene, molten	4.1	UN2304	III	4.1	IB1, T1, TP3	151	213	241	Forbidden	Forbidden	
Naphthylamineperchlorate	Forbidden										
Naphthylthiourea	6.1	UN1651	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
Naphthylurea	6.1	UN1652	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	
Natural gases (with high methane content), see Methane, etc. (UN 1971, UN 1972)											
Neohexane, see Hexanes											
Neon, compressed	2.2	UN1065		2.2		306	302	302	75 kg	150 kg	
Neon, refrigerated liquid (cryogenic liquid)	2.2	UN1913		2.2	T75, TP5	320	316	None	50 kg	500 kg	
New explosive or explosive device, see §§ 173.51 and 173.56											
Nickel carbonyl	6.1	UN1259	I	6.1, 3	1	None	198	None	Forbidden	Forbidden	18, 40

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Nickel cyanide	6.1	UN1653	II	6.1	IB8, IP2, IP4, N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Nickel nitrate	5.1	UN2725	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Nickel nitrite	5.1	UN2726	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nickel picrate	Forbidden											
	Nicotine	6.1	UN1654	II	6.1	IB2	153	202	243	5 L	60 L	A	
	Nicotine compounds, liquid, n.o.s. or Nicotine preparations, liquid, n.o.s.	6.1	UN3144	I	6.1	A4	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	B	40
	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s.	6.1	UN1655	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nicotine hydrochloride liquid or solution	6.1	UN1656	II	6.1	IB2	153	202	243	5 L	60 L	A	
	Nicotine hydrochloride, solid	6.1	UN3444	III	6.1	IB3	153	203	241	60 L	220 L	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine salicylate	6.1	UN1657	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine sulfate solution	6.1	UN1658	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Nicotine sulphate, solid	6.1	UN3445	III	6.1	IB3, T7, TP2	153	203	241	60 L	220 L	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nicotine tartrate	6.1	UN1659	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Nitrated paper (unstable)	Forbidden											
	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	UN3218	II	5.1	58, IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
				III	5.1	58, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Nitrates, inorganic, n.o.s.	5.1	UN1477	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
				III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nitrates of diazonium compounds	Forbidden											
	Nitrating acid mixtures, spent with more than 50 percent nitric acid	8	UN1826	I	8, 5.1	A7, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures spent with not more than 50 percent nitric acid	8	UN1826	II	8	A7, B2, IB2, T8, TP2, TP12	None	158	242	Forbidden	30 L	D	40
	Nitrating acid mixtures with more than 50 percent nitric acid	8	UN1796	I	8, 5.1	A7, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	40, 66
	Nitrating acid mixtures with not more than 50 percent nitric acid	8	UN1796	II	8	A7, B2, IB2, T8, TP2, TP12, TP13	None	158	242	Forbidden	30 L	D	40
	Nitric acid other than red fuming, with more than 70 percent nitric acid	8	UN2031	I	8, 5.1	A3, B47, B53, T10, TP2, TP12, TP13	None	158	243	Forbidden	2.5 L	D	44, 66, 89, 90, 110, 111
	Nitric acid other than red fuming, with not more than 70 percent nitric acid	8	UN2031	II	8	A6, B2, B47, B53, IB2, T8, TP2, TP12	None	158	242	Forbidden	30 L	D	44, 66, 89, 90, 110, 111
+	Nitric acid, red fuming	8	UN2032	I	8, 5.1, 6.1.	2, B9, B32, B74, T20, TP2, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 66, 74, 89, 90
	Nitric oxide, compressed	2.3	UN1660		2.3, 5.1, 8.	1, B37, B46, B50, B60, B77	None	337	None	Forbidden	Forbidden	D	40, 89, 90

		2.3	UN1975	.....	2.3, 5.1, 8.	1, B7, B9, B14, B45, B46, B61, B66, B67, B77 T14, TP2, TP13, TP27	None ...	337	None ...	Forbidden	Forbidden	D	40, 89, 90
	Nitric oxide and dinitrogen tetroxide mixtures or Nitric oxide and nitrogen dioxide mixtures	2.3	UN3273	.....	I 3, 6.1	IB2, T11, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40, 52
G	Nitriles, flammable, toxic, n.o.s.	3	UN3273	.....	II 3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40, 52
		6.1	UN3275	.....	I 6.1, 3	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
G	Nitriles, toxic, flammable, n.o.s.	6.1	UN3275	.....	II 6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40, 52
		6.1	UN3276	.....	I 6.1	5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	52
G	Nitriles, toxic, liquid, n.o.s.	6.1	UN3276	.....	I 6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3276	.....	II 6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3439	.....	II 6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	52
G	Nitriles, toxic, liquid, n.o.s.	6.1	UN3276	.....	III 6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	52
G	Nitriles, toxic, solid, n.o.s.	6.1	UN3439	.....	III 6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Nitrites, inorganic, aqueous solution, n.o.s.	5.1	UN3219	.....	II 5.1	IB1, T4, TP1	152	202	242	1 L	5 L	B	46, 56, 58, 133
		5.1	UN2627	.....	III 5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	46, 56, 58, 133
	Nitrites, inorganic, n.o.s.	5.1	UN2307	.....	II 6.1	33, IB8, IP4, T3, TP33	152	212	241	5 kg	25 kg	A	46, 56, 58, 133
	3-Nitro-4-chlorobenzotrifluoride	6.1	UN2307	.....	II 6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	6-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden	UN2307	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Nitro isobutane triol trinitrate	Forbidden	UN2307	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	N-Nitro-N-methylglycolamide nitrate	Forbidden	UN2307	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	2-Nitro-2-methylpropanol nitrate	Forbidden	UN2307	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Nitro urea	1.1D	UN0147	.....	II 1.1D	.....	None	62	None	Forbidden	Forbidden	10	.....
	N-Nitroaniline	6.1	UN1661	.....	II 6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
+	Nitroanilines (o-, m-, p-)	6.1	UN1661	.....	II 6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
	Nitroanisole, liquid	6.1	UN2730	.....	III 6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Nitroanisoles, solid	6.1	UN3458	.....	III 6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
+	Nitrobenzene	6.1	UN1662	.....	II 6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	m-Nitrobenzene diazonium perchlorate	Forbidden	UN2305	.....	II 8	B2, B4, IB8, IP2, IP4, T3, TP33	154	202	242	1 L	30 L	A	.....
	Nitrobenzenesulfonic acid	8	UN2305	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Nitrobenzol, see Nitrobenzene	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	5-Nitrobenzotriazol	1.1D	UN0385	.....	II 1.1D	.....	None	62	None	Forbidden	Forbidden	10	.....
	Nitrobenzotrifluorides, liquid	6.1	UN2306	.....	II 6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Nitrobenzotrifluorides, solid	6.1	UN3431	.....	II 6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Nitrobenzenes, liquid	6.1	UN2732	.....	III 6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Nitrobenzenes, solid	6.1	UN3459	.....	III 6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Nitrocellulose, dry or wetted with less than 25 percent water (or alcohol), by mass	1.1D	UN0340	.....	II 1.1D	.....	None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose membrane filters, with not more than 12.6 percent nitrogen, by dry mass	4.1	UN3270	.....	II 4.1	43, A1	151	212	240	1 kg	15 kg	D	.....
	Nitrocellulose, plasticized with not less than 18 percent plasticizing substance, by mass	1.3C	UN0343	.....	II 1.3C	.....	None	62	None	Forbidden	Forbidden	10	.....
	Nitrocellulose, solution, flammable with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.	3	UN2059	.....	I 3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	.....
		4.1	UN2557	.....	II 4.1	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	.....
	Nitrocellulose, unmodified or plasticized with less than 18 percent plasticizing substance, by mass.	1.1D	UN0341	.....	III 3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	27E
	Nitrocellulose, wetted with not less than 25 percent alcohol, by mass	1.3C	UN0342	.....	II 1.3C	.....	None	62	None	Forbidden	Forbidden	13	.....
	Nitrocellulose with alcohol with not less than 25 percent alcohol by mass, and with not more than 12.6 percent nitrogen, by dry mass.	4.1	UN2556	.....	II 4.1	.....	151	212	240	1 kg	15 kg	D	28
	Nitrocellulose, with not more than 12.6 percent nitrogen, by dry mass, or Nitrocellulose mixture with pigment or Nitrocellulose mixture with plasticizer or Nitrocellulose mixture with pigment and plasticizer.	4.1	UN2557	.....	II 4.1	44	151	212	240	1 kg	15 kg	D	28
	Nitrocellulose with water with not less than 25 percent water, by mass	4.1	UN2555	.....	II 4.1	.....	151	212	240	15 kg	50 kg	E	28
	Nitrochlorobenzene, see Chloronitrobenzenes etc	6.1	UN2446	.....	III 6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	.....
	Nitroresols, solid	6.1	UN2446	.....	III 6.1	.....	153	213	240	.....	.....	.....	.....
	Nitroresols, liquid	6.1	UN3434	.....	III 6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	.....
	Nitroethane	3	UN2842	.....	III 3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stowage
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A) (10B)
	Nitroethyl nitrate	Forbidden										
	Nitroethylene polymer	Forbidden	UN1066		2.2		306	302	314, 315	75 kg	150 kg	A
	Nitrogen, compressed	2.2										
	Nitrogen dioxide, see Dinitrogen tetroxide											
	Nitrogen fertilizer solution, see Fertilizer ammoniating solution etc											
	Nitrogen, mixtures with rare gases, see Rare gases and nitrogen mixtures											
	Nitrogen peroxide, see Dinitrogen tetroxide											
	Nitrogen, refrigerated liquid cryogenic liquid	2.2	UN1977		2.2	T75, TP5	320	316	318	50 kg	500 kg	D
	Nitrogen tetroxide and nitric oxide mixtures, see Nitric oxide and nitrogen tetroxide mixtures											
	Nitrogen tetroxide, see Dinitrogen tetroxide											
	Nitrogen trichloride	Forbidden										
	Nitrogen trifluoride	2.2	UN2451		2.2		None	302	None	75 kg	150 kg	D
	Nitrogen triiodide	Forbidden			5.1							40
	Nitrogen triiodide monoamine	Forbidden										
	Nitrogen trioxide	2.3	UN2421		2.3		None	336	245	Forbidden	Forbidden	D
	Nitroglycerin, desensitized with not less than 40 percent non-volatile water insoluble phlegmatizer, by mass	1.1D	UN0143	II	1.1D, 6.1	125	None	62	None	Forbidden	Forbidden	13
	Nitroglycerin, liquid, not desensitized	Forbidden										
	Nitroglycerin mixture, desensitized, liquid, flammable, n.o.s. with not more than 30 percent nitroglycerin, by mass	3	UN3343		3	129	None	214	None	Forbidden	Forbidden	D
	Nitroglycerin mixture, desensitized, liquid, n.o.s. with not more than 30 percent nitroglycerin, by mass	3	UN3357	II	3	142	None	202	243	5 L	60 L	E
	Nitroglycerin mixture, desensitized, solid, n.o.s. with more than 2 percent but not more than 10 percent nitroglycerin, by mass	4.1	UN3319	II	4.1	118	None	None	None	Forbidden	0.5 kg	E
	Nitroglycerin, solution in alcohol, with more than 1 percent but not more than 5 percent nitroglycerin	3	UN3064	II	3	N8	None	202	None	Forbidden	5 L	E
	Nitroglycerin, solution in alcohol, with more than 1 percent but not more than 10 percent nitroglycerin	1.1D	UN0144	II	1.1D		None	62	None	Forbidden	Forbidden	10
	Nitroglycerin solution in alcohol with not more than 1 percent nitroglycerin	3	UN1204	II	3	IB2, N34	150	202	None	5 L	60 L	B
	Nitroguanidine nitrate	Forbidden										
	Nitroguanidine or Picric, dry or wetted with less than 20 percent water, by mass	1.1D	UN0282	II	1.1D	23, A8, A19, A20, N41	None	62	None	Forbidden	Forbidden	10
	Nitroguanidine, wetted or Picric, wetted with not less than 20 percent water, by mass	4.1	UN1336	I	4.1		None	211	None	1 kg	15 kg	E
	1-Nitrohydantoin	Forbidden										
	Nitrohydrochloric acid	8	UN1798	I	8	A3, B10, N41, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D
	Nitromannite (dry)	Forbidden										40, 66, 74, 89, 90
	Nitromannite, wetted, see Mannitol hexanitrate, etc											
	Nitromethane	3	UN1261	II	3		150	202	None	Forbidden	60 L	A
	Nitromucic acid, see Nitrohydrochloric acid											
	Nitronaphthalene	4.1	UN2538	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A
	4-Nitrophenylhydrazine, with not less than 30 percent water, by mass	4.1	UN3376	I	4.1	164, A8, A19, A20, N41	None	211	None	Forbidden	15 kg	E
	Nitrophenols (o-, m-, p-)	6.1	UN1663	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A
	m-Nitrophenyldinitro methane	Forbidden										36
	Nitropropanes	3	UN2608	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A
	p-Nitrosodimethylaniline	4.2	UN1369	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	D
	Nitrostarch, dry or wetted with less than 20 percent water, by mass	1.1D	UN0146	II	1.1D	23, A8, A19, A20, N41	None	62	None	Forbidden	Forbidden	10
	Nitrostarch, wetted with not less than 20 percent water, by mass	4.1	UN1337	I	4.1		None	211	None	1 kg	15 kg	D
	Nitrosugars (dry)	Forbidden										
	Nitrosyl chloride	2.3	UN1069		2.3, 8	3, B14	None	304	314	Forbidden	Forbidden	D
	Nitrosylsulfuric acid, liquid	8	UN2308	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	D

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Nitrosylsulfuric acid, solid	8	UN3456	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	D	40, 66, 74, 89, 90
Nitrotoluenes, liquid	6.1	UN1664	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
Nitrotoluenes, solid	6.1	UN3446	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Nitrotoluidines (mono)	6.1	UN2660	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Nitrotriazolone or NTO	1.1D	UN0490	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Nitrous oxide and carbon dioxide mixtures, see Carbon dioxide and nitrous oxide mixtures	2.2	UN1070		2.2	A14	306	304	314, 315	75 kg	150 kg	A	40
Nitrous oxide, refrigerated liquid	2.2	UN2201		2.2	B6, T75, TP5, TP22	None	304	314, 315	Forbidden	Forbidden	B	40
Nitroxylene, liquid	6.1	UN1665	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
Nitroxylene, solid	6.1	UN3447	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Nitroxylol, see Nitroxylene												
Nonanes	3	UN1920	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Non-flammable gas, n.o.s., see Compressed gas, etc. or Liquefied gas, etc												
Non-liquefied gases, see Compressed gases, etc												
Nonliquefied hydrocarbon gas, see Hydrocarbon gas mixture, compressed, n.o.s.												
Nonyltrichlorosilane	8	UN1799	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Norhausen acid, see Sulfuric acid, fuming, etc												
2,5-Norbornadiene, stabilized, see Bicyclo 2,2,1 hepta-2,5-diene, stabilized												
Octadecyltrichlorosilane	8	UN1800	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Octadiene	3	UN2309	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
1,7-Octadecene-3,5-diene-1,8-dimethoxy-9-octadecynol acid	2.2	UN2422		2.2		None	304	314, 315	75 kg	150 kg	A	
Octafluorobut-2-ene or Refrigerant gas R 1318	2.2	UN1976		2.2	T50	None	304	314, 315	75 kg	150 kg	A	
Octafluorocyclobutane, or Refrigerant gas RC 318	2.2	UN2424		2.2	T50	None	304	314, 315	75 kg	150 kg	A	
Octafluoropropane or Refrigerant gas R 218	3	UN1262	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Octanes	1.1D	UN0266	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Octogen, etc. see Cyclotetramethylene tetranitramine, etc	1.1D	UN0496	III	1.1D		None	62	None	Forbidden	Forbidden	10	
Octolite or Octol, dry or wetted with less than 15 percent water, by mass	3	UN1191	III	3	B1, IB3, T2, TP1	150	202	242	60 L	220 L	A	
Octyl aldehydes	8	UN1801	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Octyltrichlorosilane	2.3	UN1071		2.3		None	304	314, 315	Forbidden	25 kg	D	40
Oil gas, compressed				2.1								
Oleum, see Sulfuric acid, fuming												
Organic peroxide type A, liquid or solid	5.2	UN3101	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
Organic peroxide type B, liquid	5.2	UN3111	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type B, liquid, temperature controlled	5.2	UN3102	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
Organic peroxide type B, solid	5.2	UN3112	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type B, solid, temperature controlled	5.2	UN3103	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
Organic peroxide type C, liquid	5.2	UN3113	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type C, liquid, temperature controlled	5.2	UN3104	II	5.2		152	225	None	5 kg	10 kg	D	12, 40, 52, 53
Organic peroxide type C, solid	5.2	UN3114	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type C, solid, temperature controlled	5.2	UN3105	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
Organic peroxide type D, liquid	5.2	UN3115	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type D, liquid, temperature controlled	5.2	UN3106	II	5.2		152	225	None	5 kg	10 kg	D	12, 40, 52, 53
Organic peroxide type D, solid	5.2	UN3116	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
Organic peroxide type D, solid, temperature controlled	5.2	UN3107	II	5.2		152	225	None	10 L	25 L	D	12, 40, 52, 53

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Organic peroxide type E, liquid, temperature controlled	5.2	UN3117	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type E, solid	5.2	UN3108	II	5.2		152	225	None	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type E, solid, temperature controlled	5.2	UN3118	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type F, liquid	5.2	UN3109	II	5.2	IP5	152	225	225	10 L	25 L	D	12, 40, 52, 53
G	Organic peroxide type F, liquid, temperature controlled	5.2	UN3119	II	5.2	IP5	None	225	225	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type F, solid	5.2	UN3110	II	5.2	TP33	152	225	225	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type F, solid, temperature controlled	5.2	UN3120	II	5.2	TP33	None	225	225	Forbidden	Forbidden	D	12, 40, 52, 53
D	Organic phosphate, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas. Organic pigments, self-heating	2.3 4.2	NA1955 UN3313	 II	2.3 4.2	3 IB8, IP2, IP4, T3, TP33	None None	334 212	None 241	Forbidden 15 kg	Forbidden 50 kg	D C	53 40
G	Organoarsenic compound, liquid, n.o.s.	6.1	UN3280	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Organoarsenic compound, solid, n.o.s.	6.1	UN3465	I	6.1	5, T14, TP2, TP13, TP27	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Organochlorine pesticides liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2762	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Organochlorine pesticides, liquid, toxic	6.1	UN2996	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Organochlorine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN2995	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
	Organochlorine pesticides, solid, toxic	6.1	UN2761	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
G	Organometallic compound, toxic, liquid, n.o.s.	6.1	UN3282	I	6.1	T14, TP2, TP13, TP27	None	211	242	5 kg	50 kg	B	
				II	6.1	IB2, T11, TP2, TP27	153	212	242	25 kg	100 kg	B	
				III	6.1	IB3, T7, TP1, TP28	153	213	240	100 kg	200 kg	A	
G	Organometallic compound, toxic, solid, n.o.s.	6.1	UN3467	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di-vision	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
D D G	Organotin compounds, liquid, n.o.s.	6.1	UN2788	I	6.1	A3, N33, N34, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
				II	6.1	A3, IB2, N33, N34, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40	
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40	
	Organotin compounds, solid, n.o.s.	6.1	UN3146	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	40	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40	
	Organotin pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2787	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40	
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40	
	Organotin pesticides, liquid, toxic	6.1	UN3020	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40	
		Organotin pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3019	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
D D G				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
				III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40	
	Organotin pesticides, solid, toxic	6.1	UN2786	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40	
	Ortho-nitroaniline, see Nitroanilines etc													
	Osmium tetroxide	6.1	UN2471	I		A8, IB7, IP1, N33, N34, T6, TP33	None	211	242	5 kg		B	40	
	Other regulated substances, liquid, n.o.s.	9	NA3082	III	9	IB3, T2, TP1	155	203	241	No limit	No limit	A		
	Other regulated substances, solid, n.o.s.	9	NA3077	III	9	B54, IB8, IP2, T1, TP33	155	213	240	No limit	No limit	A		
	Oxidizing liquid, corrosive, n.o.s.	5.1	UN3098	I	5.1, 8	A6	None	201	244	Forbidden	2.5 L	D	13, 56, 58, 106, 138	
					II	5.1, 8	IB1	None	202	243	1 L	5 L	B	34, 56, 58, 106, 138
					III	5.1, 8	IB2	152	203	242	2.5 L	30 L	B	34, 56, 58, 106, 138
G	Oxidizing liquid, n.o.s.	5.1	UN3199	I	5.1	127, A2, A6	None	201	243	Forbidden	2.5 L	D	56, 58, 106, 138	
				II	5.1	127, A2, IB2	152	202	242	1 L	5 L	B	56, 58, 106, 138	
				III	5.1	127, A2, IB2	152	203	241	2.5 L	30 L	B	56, 58, 106, 138	

G	Oxidizing liquid, toxic, n.o.s.	5.1	UN3099	I	5.1, 6.1.	A6	None	201	244	Forbidden	2.5 L	D	56, 58, 106, 138
				II	5.1, 6.1.	IB1	152	202	243	1 L	5 L	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	IB2	152	203	242	2.5 L	30 L	B	56, 58, 95, 106, 138
G	Oxidizing solid, corrosive, n.o.s.	5.1	UN3085	I	5.1, 8		None	211	242	1 kg	15 kg	D	13, 56, 58, 95, 106, 138
				II	5.1, 8	IB6, IP2, T3, TP33	None	212	242	5 kg	25 kg	B	13, 34, 56, 58, 95, 106, 138
				III	5.1, 8	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	13, 34, 56, 58, 95, 106, 138
G	Oxidizing solid, flammable, n.o.s.	5.1	UN3137	I	5.1, 4.1.		None	214	214	Forbidden	Forbidden		56, 58, 106, 138
G	Oxidizing solid, n.o.s.	5.1	UN1479	I	5.1	IB5, IP1	None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	B	56, 58, 106, 138
				III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 106, 138
G	Oxidizing solid, self-heating, n.o.s.	5.1	UN3100	I	5.1, 4.2.		None	214	214	Forbidden	Forbidden		56, 58, 106, 138
				II	5.1, 4.2.		None	214	214	Forbidden	Forbidden		56, 58, 106, 138
G	Oxidizing solid, toxic, n.o.s.	5.1	UN3087	I	5.1, 6.1.		None	211	242	1 kg	15 kg	D	56, 58, 106, 138
				II	5.1, 6.1.	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	B	56, 58, 95, 106, 138
				III	5.1, 6.1.	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 95, 106, 138
G	Oxidizing solid, water-reactive, n.o.s.	5.1	UN3121		5.1, 4.3.		None	214	214	Forbidden	Forbidden		56, 58, 106, 138
	Oxygen and carbon dioxide mixtures, see Carbon dioxide and oxygen mixtures												
	Oxygen, compressed	2.2	UN1072		2.2, 5.1.	A14, A52	306	302	314, 315.	75 kg	150 kg	A	13, 40, 89, 90
	Oxygen difluoride, compressed	2.3	UN2190		2.3, 5.1, 8.	1	None	304	None	Forbidden	Forbidden	D	56, 58, 95, 106, 138
	Oxygen generator, chemical (including when contained in associated equipment, e.g., passenger service units (PSUs), portable breathing equipment (PBE), etc).	5.1	UN3356	II	5.1	60, A51	None	212	None	Forbidden	25 kg gross	D	56, 58, 95, 106, 138
+	Oxygen generator, chemical, spent	9	NA3356	III	9	61	None	213	None	Forbidden	Forbidden	A	56, 58, 95, 106, 138
	Oxygen mixtures with rare gases, see Rare gases and oxygen mixtures												
	Oxygen, refrigerated liquid (cryogenic liquid)	2.2	UN1073		2.2, 5.1.	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	56, 58, 95, 106, 138
	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.	3	UN1263	I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	56, 58, 95, 106, 138
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	56, 58, 95, 106, 138
				III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	56, 58, 95, 106, 138
	Paint or Paint related material	8	UN3066	II	8	B2, IB2, T7, TP2	154	173	242	1 L	30 L	A	56, 58, 95, 106, 138
				III	8	B52, IB3, T4, TP1	154	173	241	5 L	60 L	A	56, 58, 95, 106, 138
	Paint related material including paint thinning, drying, removing, or reducing compound	3	UN1263	I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	56, 58, 95, 106, 138
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	56, 58, 95, 106, 138

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
D A W +	Paper, unsaturated oil treated <i>incompletely dried (including carbon paper)</i>	4.2	UN1379	III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A		
	Paraformaldehyde	4.1	UN2213	III	4.2 4.1	IB8, IP3 A1, IB8, IP3, T1, TP33	None 151	213 213	241 240	Forbidden 25 kg	Forbidden 100 kg	A		
	Paraldehyde	3	UN1264	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Paranitroaniline, solid, see Nitroanilines etc													
	Parathion and compressed gas mixture	2.3	NA1967		2.3	3	None	334	245	Forbidden	Forbidden	E	40	
	PCB, see Polychlorinated biphenyls													
	Pentaborane	4.2	UN1380	I	4.2, 6.1	1	None	205	245	Forbidden	Forbidden	D		
	Pentachloroethane	6.1	UN1669	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40	
	Pentachlorophenol	6.1	UN3155	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
	Pentaerythritol tetranitrate (dry)	Forbidden	UN3344	II	4.1	118, N85	None	214	None	Forbidden	Forbidden	E		
	Pentaerythritol tetranitrate mixture, desensitized, solid, n.o.s. with more than 10 percent but not more than 20 percent PETN, by mass.	1.1D	UN0411	II	1.1D		None	62	None	Forbidden	Forbidden	10		
	Pentaerythritol tetranitrate or Pentaerythritol tetranitrate or PETN, with not less than 7 percent wax by mass.	1.1D	UN0150	II	1.1D	121	None	62	None	Forbidden	Forbidden	10		
	Pentaerythritol tetranitrate, wetted or Pentaerythritol tetranitrate, wetted, or PETN, wetted with not less than 25 percent water, by mass, or Pentaerythritol tetranitrate, or Pentaerythritol tetranitrate or PETN, desensitized with not less than 15 percent phlegmatizer by mass.													
	Pentaerythritol tetranitrate, see Pentaerythritol tetranitrate, etc													
	Pentafluoroethane or Refrigerant gas R 125	2.2	UN3220			2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Pentamethylheptane	3	UN2286	III	3	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Pentane-2,4-dione	3	UN2310	III	3, 6.1	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Pentanes	3	UN1265	I	3	3	T11, TP2	150	201	243	1 L	30 L	E	
	Pentanols	Forbidden			II	3	IB2, IP8, T4, TP1	150	202	242	5 L	60 L	E	
	Pentanitroaniline (dry)	3	UN1105	II	3	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	
	Pentol				III	3	B1, B3, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	1-Pentene (n-amylene)	3	UN1108	I	3	3	T11, TP2	150	201	243	1 L	30 L	E	
	1-Pentol	8	UN2705	II	8	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	26, 27
Pentolite, dry or wetted with less than 15 percent water, by mass	1.1D	UN0151	II	1.1D	1.1D		None	62	None	Forbidden	Forbidden	10		
Pepper spray, see Aerosols, etc. or Self-defense spray, non-pressurized														
Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3211	II	5.1	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133	
Perchlorates, inorganic, n.o.s.	5.1	UN1481	III	5.1	5.1	IB2, T4, TP1	152	202	241	2.5 L	30 L	B	56, 58, 69, 133	
Perchloric acid, with more than 72 percent acid by mass				III	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58	
Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass	Forbidden	5.1	UN1873	I	5.1, 8	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58	
Perchloric acid with not more than 50 percent acid by mass		8	UN1802	II	8, 5.1	A2, A3, N41, T10, TP1, TP12	None	201	243	Forbidden	2.5 L	D	66	
Perchloroethylene, see Tetrachloroethylene						IB2, N41, T7, TP2	None	202	243	Forbidden	30 L	C	66	
Perchloromethyl mercaptan	6.1	UN1670	I	6.1	6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40	
Perchloryl fluoride	2.3	UN3083			2.3, 5.1	2, B9, B14	None	302	314, 315	Forbidden	Forbidden	D	40	
Percussion caps, see Primers, cap type														
Perfluoro-2-butene, see Octafluorobut-2-ene														
Perfluoro(ethyl vinyl ether)	2.1	UN3154			2.1		306	302	314, 315	Forbidden	150 kg	E	40	

Perfluoro(methyl vinyl ether)	2.1	UN3153	.....	2.1	.....	T50	306	302, 304, 305	314, 315	Forbidden	150 kg	E	40
Perfumery products with flammable solvents	3	UN1266	.....	II	3	.....	149, IB2, T4, TP1, TP8	150	242	15 L	60 L	B	.....
.....	.....	.....	.....	III	3	.....	B1, IB3, T2, TP1	150	242	60 L	220 L	A	.....
Permanganates, inorganic, aqueous solution, n.o.s.	5.1	UN3214	.....	II	5.1	.....	26, IB2, T4, TP1	152	242	1 L	5 L	D	56, 58, 133, 138
Permanganates, inorganic, n.o.s.	5.1	UN1482	.....	II	5.1	.....	26, A30, IB6, IP2, T3, TP33	152	242	5 kg	25 kg	D	56, 58, 138
.....	.....	.....	.....	III	5.1	.....	26, A30, IB6, IP3, T1, TP33	152	240	25 kg	100 kg	D	56, 58, 138
Peroxides, inorganic, n.o.s.	5.1	UN1483	.....	II	5.1	.....	A7, A20, IB6, IP2, N34, T3, TP33	None	242	5 kg	25 kg	A	13, 52, 66, 75
.....	.....	.....	.....	III	5.1	.....	A7, A20, IB8, IP3, N34, T1, TP33	152	240	25 kg	100 kg	A	13, 52, 66, 75
Peroxyacetic acid, with more than 43 percent and with more than 6 percent hydrogen peroxide	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Persulfates, inorganic, aqueous solution, n.o.s.	5.1	UN3216	.....	III	5.1	.....	IB2, T4, TP1, TP29	152	241	2.5 L	30 L	A	56, 133
Persulfates, inorganic, n.o.s.	5.1	UN3215	.....	III	5.1	.....	IB8, IP3, T1, TP33	152	240	25 kg	100 kg	A	56, 58
Pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN3021	.....	I	3, 6.1	.....	B5, T14, TP2, TP13, TP27	None	243	Forbidden	30 L	B	.....
.....	.....	.....	.....	II	3, 6.1	.....	IB2, T11, TP2, TP13, TP27	150	243	1 L	60 L	B	.....
Pesticides, liquid, toxic, flammable, n.o.s. flash point not less than 23 degrees C	6.1	UN2903	.....	I	6.1, 3	.....	T14, TP2, TP13, TP27	None	243	1 L	30 L	B	40
.....	.....	.....	.....	II	6.1, 3	.....	IB2, T11, TP2, TP13, TP27	153	243	5 L	60 L	B	40
Pesticides, liquid, toxic, n.o.s.	6.1	UN2902	.....	III	6.1, 3	.....	B1, IB3, T7, TP2, T14, TP2, TP13, TP27	153	242	60 L	220 L	A	40
.....	.....	.....	.....	I	6.1	.....	IB8, IP2, IP4, T3, TP33	153	243	1 L	30 L	B	40
.....	.....	.....	.....	II	6.1	.....	IB2, T11, TP2, TP13, TP27	153	243	5 L	60 L	B	40
.....	.....	.....	.....	III	6.1	.....	IB3, T7, TP2, TP28	153	241	60 L	220 L	A	40
Pesticides, solid, toxic, n.o.s.	6.1	UN2588	.....	I	6.1	.....	IB7, T6, TP33	None	242	5 kg	50 kg	A	40
PETN, see Pentaerythrite tetranitrate .....	.....	.....	.....	II	6.1	.....	IB8, IP2, IP4, T3, TP33	153	242	25 kg	100 kg	A	40
PETN/TNT, see Pentolite, etc .....	.....	.....	.....	III	6.1	.....	IB8, IP3, T1, TP33	153	240	100 kg	200 kg	A	40
Petrol, see Gasoline .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petroleum crude oil	3	UN1267	.....	I	3	.....	144, T11, TP1, TP8	150	243	1 L	30 L	E	.....
.....	.....	.....	.....	II	3	.....	144, IB2, T4, TP1, TP8	150	242	5 L	60 L	B	.....
.....	.....	.....	.....	III	3	.....	144, B1, IB3, T2, TP1	150	242	60 L	220 L	A	.....
Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	UN1268	.....	I	3	.....	144, T11, TP1, TP8	150	243	1 L	30 L	E	.....
.....	.....	.....	.....	II	3	.....	144, IB2, T7, TP1, TP8, TP28	150	242	5 L	60 L	B	.....
.....	.....	.....	.....	III	3	.....	144, B1, IB3, T4, TP1, TP29	150	242	60 L	220 L	A	.....
Petroleum gases, liquefied or Liquefied petroleum gas	2.1	UN1075	.....	.....	2.1	.....	.....	306	314, 315	Forbidden	150 kg	E	40
Petroleum oil	3	NA1270	.....	I	3	.....	144, T11, TP1	None	243	1 L	30 L	E	.....
.....	.....	.....	.....	II	3	.....	144, IB2, T7, TP1, TP8, TP28	150	242	5 L	60 L	B	.....
.....	.....	.....	.....	III	3	.....	144, B1, IB3, T4, TP1, TP29	150	242	60 L	220 L	A	.....
Phenacyl bromide	6.1	UN2645	.....	II	6.1	.....	IB8, IP2, IP4, T3, TP33	153	242	25 kg	100 kg	B	40
Phenetidines	6.1	UN2311	.....	III	6.1	.....	IB3, T4, TP1	153	241	60 L	220 L	A	.....
Phenol, molten	6.1	UN2312	.....	II	6.1	.....	B14, T7, TP3	None	243	Forbidden	Forbidden	B	40
Phenol, solid	6.1	UN1671	.....	II	6.1	.....	IB8, IP2, IP4, N78, T3, TP33	153	242	25 kg	100 kg	A	.....
Phenol solutions	6.1	UN2821	.....	II	6.1	.....	IB2, T7, TP2	153	243	5 L	60 L	A	.....
.....	.....	.....	.....	III	6.1	.....	IB3, T4, TP1	153	241	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Phenolsulfonic acid, liquid	8	UN1803	II	8	B2, IB2, N41, T7, TP2	154	202	242	1 L	30 L	C	14
	Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic flash point less than 23 degrees C.	3	UN3346	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3347	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Phenoxyacetic acid derivative pesticide, solid, toxic	6.1	UN3345	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Phenyl chloroformate	6.1	UN2746	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100, 40
	Phenyl isocyanate	6.1	UN2487	I	6.1, 3	2, B9, B14, B32, B74, B77, N33, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 52
	Phenyl mercaptan	6.1	UN2337	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
	Phenyl phosphorus dichloride	8	UN2798	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
	Phenyl phosphorus trichloride	8	UN2799	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
	Phenylacetone, liquid	6.1	UN2470	III	6.1	IB3, T4, TP1, TP2	153	203	241	60 L	220 L	A	52
	Phenylacetyl chloride	8	UN2577	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
	Phenylcarbamylamine chloride	6.1	UN1672	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	<i>m</i> -Phenylene diaminedipchlorate (dry)	Forbidden											
	Phenylenediamines (o-; m-; p-;)	6.1	UN1673	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Phenylhydrazine	6.1	UN2572	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Phenylmercuric acetate	6.1	UN1674	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Phenylmercuric compounds, n.o.s.	6.1	UN2026	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Phenylmercuric hydroxide	6.1	UN1894	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Phenylmercuric nitrate	6.1	UN1895	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Phenyltrichlorosilane	8	UN1804	II	8	A7, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
	Phosgene	2.3	UN1076		2.3, 8	1, B7, B46	None	192	314	Forbidden	Forbidden	D	40

9-Phosphabicyclononanes or Cyclooctadiene phosphines	4.2	UN2940	II	4.2	A19, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	.....
Phosphine	2.3	UN2199	.....	2.3, 2.1	A7, IB3, N34, T4, TP1	None	192	245	Forbidden	Forbidden	D	40
Phosphoric acid solution	8	UN1805	III	8	IB8, IP3, T1, TP33	154	203	241	5 L	60 L	A	.....
Phosphoric acid, solid	8	UN3453	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
Phosphoric acid triethylenimine, see Tris-(1-aziridinyl)phosphine oxide, solution	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphoric anhydride, see Phosphorus pentoxide	8	UN2834	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	48
Phosphorous acid	4.1	UN1338	III	4.1	A1, A19, B1, B8, B26, IB8, IP3, T1, TP33	None	213	243	25 kg	100 kg	A	74
Phosphorus, amorphous	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphorus bromide, see Phosphorus tribromide	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphorus chloride, see Phosphorus trichloride	4.1	UN1339	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus heptasulfide, free from yellow or white phosphorus	8	UN1939	II	8	B8, IB8, IP2, IP4, N41, N43, T3, TP33	None	212	240	Forbidden	50 kg	C	12, 40
Phosphorus oxybromide	8	UN2576	II	8	B2, B8, IB1, N41, N43, T7, TP3, TP13	None	202	242	Forbidden	Forbidden	C	40
Phosphorus oxybromide, molten	8	UN1810	II	8, 6.1	2, B9, B14, B32, B74, B77, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Phosphorus oxychloride	8	UN2691	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	Forbidden	50 kg	B	12, 40, 53, 55
Phosphorus pentabromide	8	UN1806	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	None	212	240	Forbidden	50 kg	C	40, 44, 89, 100, 141
Phosphorus pentachloride	4.1	UN1341	II	4.1	A3, A6, A7, B2, B25, IB2, N34, N43, T7, TP2	None	202	242	Forbidden	30 L	C	40
Phosphorus	2.3	UN2198	.....	2.3, 8	2, B9, B14	None	302, 304, 315	314	Forbidden	Forbidden	D	40
Phosphorus pentasulfide, free from yellow or white phosphorus	4.3	UN1340	II	4.3, 4.1	A20, B59, IB4, T3, TP33	151	212	242	15 kg	50 kg	B	74
Phosphorus pentoxide	8	UN1807	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	.....
Phosphorus sesquisulfide, free from yellow or white phosphorus	4.1	UN1341	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus tribromide	8	UN1808	II	8	A3, A6, A7, B2, B25, IB2, N34, N43, T7, TP2	None	202	242	Forbidden	30 L	C	40
Phosphorus trichloride	6.1	UN1809	I	6.1, 8	2, B9, B14, B15, B32, B74, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Phosphorus trioxide	8	UN2578	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
Phosphorus trisulfide, free from yellow or white phosphorus	4.1	UN1343	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
Phosphorus, white dry or Phosphorus, white, under water or Phosphorus white, in solution or Phosphorus, yellow dry or Phosphorus, yellow, under water or Phosphorus, yellow, in solution.	4.2	UN1381	I	4.2, 6.1	B9, B26, N34, T9, TP3, TP31	None	188	243	Forbidden	Forbidden	E	.....
Phosphorus white, molten	4.2	UN2447	I	4.2, 6.1	B9, B26, N34, T21, TP3, TP7, TP26	None	188	243	Forbidden	Forbidden	D	.....
Phosphorus (white or red) and a chlorate, mixtures of	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phosphoryl chloride, see Phosphorus oxychloride	8	UN2214	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....
Phthalic anhydride with more than .05 percent maleic anhydride	3	UN2313	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	40
Piccolines	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Picric acid, see Trinitrophenol, etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Picrite, see Nitroguaidine, etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Picryl chloride, see Trinitrochlorobenzene	3	UN1272	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
Pine oil	3	UN2368	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
alpha-Pinene	8	UN2579	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12, 52
Piperazine	8	UN2401	I	8, 3	A10, T10, TP2	None	201	243	0.5 L	2.5 L	B	52
Piperidine												
Pivaloyl chloride, see Trimethylacetyl chloride												

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Plastic molding compound in dough, sheet or extruded rope form evolving flammable vapor	9	UN3314	III	9	32, IB8, IP3, IP7	155	221	221	100 kg	200 kg	A	85, 87
	Plastic solvent, n.o.s., see Flammable liquids, n.o.s.												
	Plastics, nitrocellulose-based, self-heating, n.o.s.	4.2	UN2006	III	4.2		None	213	None	Forbidden	Forbidden	C	
	Poisonous gases, n.o.s., see Compressed or liquefied gases, flammable or toxic, n.o.s.												
	Polyalkylamines, n.o.s., see Amines, etc												
	Polychlorinated biphenyls, liquid	9	UN2315	II	9	9, 81, 140, IB3, T4, TP1	155	202	241	100 L	220 L	A	95
	Polychlorinated biphenyls, solid	9	UN3432	II	9	9, 81, 140, IB8, T3, TP33	155	212	240	100 kg	200 kg	A	95
	Polyester resin kit	3	UN3269		3	40, 149	152	225	None	5 kg	5 kg	B	
	Polyhalogenated biphenyls, liquid or Polyhalogenated terphenyls liquid	9	UN3151		9	IB2	155	204	241	100 L	220 L	A	95
	Polyhalogenated biphenyls, solid or Polyhalogenated terphenyls, solid	9	UN3152	II	9	IB8, IP2, IP4, T3, TP33	155	204	241	100 kg	200 kg	A	95
	Polymeric beads, expandable, evolving flammable vapor	9	UN2211	III	9	32, IB8, IP3, IP7, T1, TP33	155	221	221	100 kg	200 kg	A	85, 87
	Potassium	4.3	UN2257	I	4.3	A7, A19, A20, B27, IB4, IP1, N6, N34, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
	Potassium arsenate	6.1	UN1677	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium arsenite	6.1	UN1678	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
	Potassium borohydride	4.3	UN1870	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
	Potassium bromate	5.1	UN1484	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium carbonyl	Forbidden											
	Potassium chlorate	5.1	UN1485	II	5.1	A9, IB8, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium chlorate, aqueous solution	5.1	UN2427	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133
	Potassium chlorate mixed with mineral oil, see Explosive, blasting, type C												
	Potassium cuprocyanide	6.1	UN1679	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Potassium cyanide, solid	6.1	UN1680	I	6.1	B69, B77, IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52
	Potassium cyanide solution	6.1	UN3413	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52
	Potassium dichloro isocyanurate or Potassium dichloro-s-triazinetriene, see Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts etc.												
	Potassium dithionite or Potassium hydrosulfite												
	Potassium fluoride, solid	4.2	UN1929	II	4.2	A8, A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
	Potassium fluoride, solid	6.1	UN1812	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Potassium fluoride solution	6.1	UN3422	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
	Potassium fluoroacetate	6.1	UN2628	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	E	
	Potassium fluorosilicate	6.1	UN2655	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Potassium hydrate, see Potassium hydroxide, solid												
	Potassium hydrogen fluoride, see Potassium hydrogen difluoride												
	Potassium hydrogen fluoride solution, see Corrosive liquid, n.o.s.												

Potassium hydrogen sulfate	8	UN2509	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	.....
Potassium hydrogendifluoride solid	8	UN1811	II	8, 6.1	IB8, IP2, IP4, N3, N34, T3, TP33	154	212	240	15 kg	50 kg	A	25, 40, 52
Potassium hydrogendifluoride solution	8	UN3421	II	8, 6.1	IB2, N3, N34, T7, TP2	154	202	243	1 L	30 L	A	25, 40, 52
Potassium hydrosulfite, see Potassium dithionite .....	.....	.....	III	8, 6.1	IB3, N3, N34, T4, TP1	154	203	241	5 L	60 L	A	40, 52
Potassium hydroxide, solid	8	UN1813	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
Potassium hydroxide, solution	8	UN1814	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	.....
Potassium hypochlorite, solution, see Hypochlorite solutions, etc .....	.....	.....	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
Potassium, metal alloys, liquid	4.3	UN1420	I	4.3	A7, A19, A20, B27	None	201	244	Forbidden	1 L	E	40, 52
Potassium, metal alloys, solid	4.3	UN3403	I	4.3	A19, A20, B27, IB4, IP1, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	.....
Potassium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s. ....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Potassium metavanadate	6.1	UN2864	II	6.1	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29
Potassium monoxide	8	UN2033	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	25 kg	100 kg	A	.....
Potassium nitrate	5.1	UN1486	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	25 kg	A	56, 58
Potassium nitrate and sodium nitrite mixtures	5.1	UN1487	II	5.1	B78, IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
Potassium nitrite	5.1	UN1488	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Potassium perchlorate	5.1	UN1489	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Potassium permanganate	5.1	UN1490	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	56, 58, 138
Potassium peroxide	5.1	UN1491	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Potassium persulfate	5.1	UN1492	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
Potassium phosphide	4.3	UN2012	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Potassium selenate, see Selenates or Selenites .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potassium selenite, see Selenates or Selenites .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potassium sodium alloys, solid	4.3	UN3404	I	4.3	A19, B27, N34, N40, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
Potassium sodium alloys, liquid	4.3	UN1422	I	4.3	A7, A19, B27, N34, N40, T9, TP3, TP7, TP31	None	201	244	Forbidden	1 L	E	40, 52
Potassium sulfide, anhydrous or Potassium sulfide with less than 30 percent water of crystallization	4.2	UN1382	II	4.2	A19, A20, B16, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
Potassium sulfide, hydrated with not less than 30 percent water of crystallization	8	UN1847	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
Potassium superoxide	5.1	UN2466	I	5.1	A20, IB6, IP1, TP33	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Powder cake, wetted or Powder paste, wetted with not less than 17 percent alcohol by mass	1.1C	UN0433	II	1.1C	.....	None	62	None	Forbidden	Forbidden	10	.....
Powder cake, wetted or Powder paste, wetted with not less than 25 percent water, by mass	1.3C	UN0159	II	1.3C	.....	None	62	None	Forbidden	Forbidden	10	.....
Powder paste, see Powder cake, etc .....	.....	.....	II	1.1C	.....	None	62	None	Forbidden	Forbidden	.....	26E
Powder, smokeless	1.1C	UN0160	II	1.3C	.....	None	62	None	Forbidden	Forbidden	.....	26E
Powder, smokeless	1.3C	UN0161	II	1.3C	.....	None	62	None	Forbidden	Forbidden	.....	.....
Power device, explosive, see Cartridges, power device	1.4S	UN0044	II	None	.....	None	62	None	25 kg	100 kg	05	.....
Primers, cap type	1.1B	UN0377	II	1.1B	.....	None	62	None	Forbidden	Forbidden	11	.....
Primers, cap type	1.4B	UN0378	II	1.4B	.....	None	62	None	Forbidden	Forbidden	06	.....
Primers, small arms, see Primers, cap type .....	.....	.....	II	1.3G	.....	None	62	None	Forbidden	Forbidden	07	.....
Primers, tubular	1.4G	UN0320	II	1.4G	.....	None	62	None	Forbidden	Forbidden	06	.....
Primers, tubular	1.4S	UN0376	II	None	.....	None	62	None	1 L	100 kg	05	.....
Printing ink, flammable or Printing ink related material (including printing ink thinning or reducing compound), flammable	3	UN1210	I	3	T11, TP1, TP8	150	173	243	1 L	30 L	E	.....
.....	.....	.....	II	3	149, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	.....
.....	.....	.....	III	3	B1, IB3, T2, TP1	150	173	242	60 L	220 L	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	<i>Projectiles, illuminating, see Ammunition, illuminating, etc</i>	1.4S	UN0345	II	1.4S			62	None	25 kg	100 kg	01	
	<i>Projectiles, inert with tracer</i>	1.3G	UN0424	II	1.3G			62	None	Forbidden	Forbidden	03	
	<i>Projectiles, inert, with tracer</i>	1.4G	UN0425	II	1.4G			62	None	Forbidden	75 kg	02	
	<i>Projectiles, inert, with tracer</i>	1.2D	UN0346	II	1.2D			62	None	Forbidden	Forbidden	03	
	<i>Projectiles, with burster or expelling charge</i>	1.2F	UN0347	II	1.2F			62	None	Forbidden	75 kg	02	
	<i>Projectiles, with burster or expelling charge</i>	1.2F	UN0426	II	1.2F			62	None	Forbidden	Forbidden	08	
	<i>Projectiles, with burster or expelling charge</i>	1.4F	UN0427	II	1.4F			62	None	Forbidden	Forbidden	08	
	<i>Projectiles, with burster or expelling charge</i>	1.2G	UN0434	II	1.2G			62	None	Forbidden	Forbidden	03	
	<i>Projectiles, with burster or expelling charge</i>	1.4G	UN0435	II	1.4G			62	None	Forbidden	75 kg	02	
	<i>Projectiles, with bursting charge</i>	1.1F	UN0167	II	1.1F			62	None	Forbidden	Forbidden	08	
	<i>Projectiles, with bursting charge</i>	1.1D	UN0168	II	1.1D			62	None	Forbidden	Forbidden	03	
	<i>Projectiles, with bursting charge</i>	1.2D	UN0169	II	1.2D			62	None	Forbidden	Forbidden	03	
	<i>Projectiles, with bursting charge</i>	1.2F	UN0324	II	1.2F			62	None	Forbidden	Forbidden	08	
	<i>Projectiles, with bursting charge</i>	1.4D	UN0344	II	1.4D			62	None	Forbidden	75 kg	02	
	<i>Propadiene, stabilized</i>	2.1	UN2200		2.1		None	304	314, 315	Forbidden	150 kg	B	40
	<i>Propadiene mixed with methyl acetylene, see Methyl acetylene and propadiene mixtures, stabilized.</i>												
	<i>Propane see also Petroleum gases, liquefied</i>	2.1	UN1978		2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	40
	<i>Propanethiols</i>	3	UN2402	II	3	A6, IB2, T4, TP1, TP13	150	202	242	5 L	60 L	E	95, 102
	<i>n-Propanol or Propyl alcohol, normal</i>	3	UN1274	III	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Propellant, liquid</i>	1.3C	UN0495	III	1.3C	B1, IB3, T2, TP1	150	203	242	Forbidden	220 L	A	
	<i>Propellant, liquid</i>	1.1C	UN0497	II	1.1C	37	None	62	None	Forbidden	Forbidden	10	
	<i>Propellant, solid</i>	1.1C	UN0498	II	1.1C	37	None	62	None	Forbidden	Forbidden	10	
	<i>Propellant, solid</i>	1.3C	UN0499	II	1.3C		None	62	None	Forbidden	Forbidden	26E	
	<i>Propellant, solid</i>	1.4C	UN0501	II	1.4C		None	62	None	Forbidden	Forbidden	24E	
	<i>Propionaldehyde</i>	3	UN1275	III	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
	<i>Propionic acid</i>	8	UN1848	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	<i>Propionic anhydride</i>	8	UN2496	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	<i>Propionitrile</i>	3	UN2404	II	3, 6.1	IB2, T7, TP1, TP13	None	202	243	Forbidden	60 L	E	40
	<i>Propionyl chloride</i>	3	UN1815	II	3, 8	IB1, T7, TP1	150	202	243	1 L	5 L	B	40
	<i>n-Propyl acetate</i>	3	UN1276	II	3	IB2, T4, TP1	150	202	243	5 L	60 L	B	
	<i>Propyl alcohol, see Propanol</i>												
	<i>n-Propyl benzene</i>	3	UN2364	III	3	B1, IB3, T2, TP1	150	203	242	Forbidden	220 L	A	
	<i>n-Propyl chloroformate</i>	6.1	UN2740	I	6.1, 3, 8	2, B9, B14, B32, B74, B77, N34, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	B	21, 40, 100
	<i>Propyl chloride see 1-Chloropropane</i>												
	<i>Propyl formates</i>	3	UN1281	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>n-Propyl isocyanate</i>	6.1	UN2462	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	44, 89, 90, 100
	<i>Propyl mercaptan, see Propanethiols</i>												
	<i>n-Propyl nitrate</i>	3	UN1865	II	3	IB99	150	202	None	5 L	60 L	D	40
	<i>Propylamine</i>	3	UN1277	II	3, 8	A7, IB2, N34, T7, TP1	150	202	243	1 L	5 L	E	40
	<i>Propylene see also Petroleum gases, liquefied</i>	2.1	UN1077		2.1	19, T50	306	304	314, 315	Forbidden	150 kg	E	40
	<i>Propylene chlorohydrin</i>	6.1	UN2611	II	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	12, 40, 48
	<i>Propylene oxide</i>	3	UN1280	I	3	A3, N34, T11, TP2, TP7	None	201	243	1 L	30 L	E	40
	<i>Propylene tetramer</i>	3	UN2850	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>1,2-Propylenediamine</i>	8	UN2258	II	8, 3	A3, A6, IB2, N34, T7, TP2	None	202	243	1 L	30 L	A	40
	<i>Propyleneimine, stabilized</i>	3	UN1921	I	3, 6.1	A3, N34, T14, TP2, TP13	None	201	243	1 L	30 L	B	40

Propyltrichlorosilane	8	UN1816	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
Prussic acid, see Hydrogen cyanide	3	UN3350	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
Pyrethroid pesticide, liquid, flammable, toxic, flash point less than 23 degrees C			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Pyrethroid pesticide, liquid toxic	6.1	UN3352	I	6.1	T14, TP2, TP13, TP27	None	211	242	1 L	30 L	A	40
			II	6.1	IB2, T11, TP2, TP27	153	212	242	5 L	60 L	A	40
			III	6.1	IB3, T7, TP2, TP28	153	213	240	60 L	220 L	A	40
Pyrethroid pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3351	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	B	40
Pyrethroid pesticide, solid, toxic	6.1	UN3349	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Pyridine	3	UN1282	II	3	IB2, T4, TP2	None	202	242	5 L	60 L	B	21, 100
Pyridine perchlorate	Forbidden											
Pyrophoric liquid, inorganic, n.o.s.	4.2	UN3194	I	4.2	B11, T22, TP2, TP7	None	181	244	Forbidden	Forbidden	D	18
Pyrophoric liquids, organic, n.o.s.	4.2	UN2845	I	4.2		None	181	244	Forbidden	Forbidden	D	18
Pyrophoric metals, n.o.s., or Pyrophoric alloys, n.o.s.	4.2	UN1383	I	4.2	B11, T21, TP7, TP33	None	187	242	Forbidden	Forbidden	D	
Pyrophoric solid, inorganic, n.o.s.	4.2	UN3200	I	4.2	T21, TP7, TP33	None	187	242	Forbidden	Forbidden	D	
Pyrophoric solids, organic, n.o.s.	4.2	UN2846	I	4.2		None	187	242	Forbidden	Forbidden	D	
Pyrosulphuryl chloride	8	UN1817	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40
Pyroxylin solution or solvent, see Nitrocellulose												
Pyrydoline	3	UN1922	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
Quebrachitol pentanitrate	Forbidden											
Quicklime, see Calcium oxide												
Quinoline	6.1	UN2656	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
R 12, see Dichlorodifluoromethane												
R 12B1, see Chlorodifluoromethane												
R 13, see Chlorotrifluoromethane												
R 13B1, see Bromotrifluoromethane												
R 14, see Tetrafluoromethane												
R 21, see Dichlorodifluoromethane												
R 22, see Chlorodifluoromethane												
R 114, see Dichlorotetrafluoroethane												
R 115, see Chloropentafluoroethane												
R 116, see Hexafluoroethane												
R 124, see Chlorotetrafluoroethane												
R 133a, see Chlorotrifluoroethane												
R 152a, see Difluoroethane												
R 500, see Dichlorodifluoromethane and difluoroethane, etc												
R 502, see Chlorodifluoromethane and chloropentafluoroethane mixture, etc												
R 503, see Chlorotrifluoromethane and trifluoromethane, etc												
Radioactive material, excepted package-articles manufactured from natural uranium or depleted uranium or natural thorium.	7	UN2909		None		422, 426, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000						
Radioactive material, excepted package-empty packaging												
Radioactive material, excepted package-instruments or articles	7	UN2908		Empty		422, 426, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000						
Radioactive material, excepted package-limited quantity of material	7	UN2911		None		422, 426, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956,						

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifi- cation Num- bers	PG	Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
I	Radioactive material, surface contaminated objects (SCO-I or SCO-II) <i>non fissile or fissile-ex- cepted</i> .	7	UN2913		7	A56	421, 422, 428.	427	427			A	95
	Radioactive material, transported under special arrangement, <i>non fissile or fissile excepted</i>	7	UN2919		7	A56, 139						A	95, 105
	Radioactive material, transported under special arrangement, <i>fissile</i>	7	UN3331		7	A56, 139						A	95, 105
	Radioactive material, Type A package, <i>fissile non-special form</i>	7	UN3327		7	A56, W7, W8	453	417	417			A	95, 105, 131
	Radioactive material, Type A package <i>non-special form, non fissile or fissile-excepted</i>	7	UN2915		7	A56, W7, W8		415	415			A	95, 130
	Radioactive material, Type A package, special form <i>non fissile or fissile-excepted</i>	7	UN3332		7	A56, W7, W8		415, 476.	415, 476.			A	95
	Radioactive material, Type A package, special form, <i>fissile</i>	7	UN3333		7	A56, W7, W8	453	417	417			A	95, 105
	Radioactive material, Type B(M) package, <i>fissile</i>	7	UN3329		7	A56	453	417	417			A	95, 105
	Radioactive material, Type B(M) package <i>non fissile or fissile-excepted</i>	7	UN2917		7	A56		416	416			A	95, 105
	Radioactive material, Type BU package, <i>fissile</i>	7	UN3328		7	A56	453	417	417			A	95, 105
A W	Radioactive material, Type BU package <i>non fissile or fissile-excepted</i>	7	UN2916		7	A56		416	416			A	95, 105
	Radioactive material, uranium hexafluoride <i>non fissile or fissile-excepted</i>	7	UN2978		7, 8		423	420, 427.	420, 427.			A	95, 132
	Radioactive material, uranium hexafluoride, <i>fissile</i>	7	UN2977		7, 8		453	417	417			A	95, 132
	Rags, oily	4.2	UN1866	III	4.2		151	213	240	Forbidden	Forbidden	A	
	Railway torpedo, see Signals, railway track, explosive												
	Rare gases and nitrogen mixtures, compressed	2.2	UN1981		2.2		306	302	None	75 kg	150 kg	A	
	Rare gases and oxygen mixtures, compressed	2.2	UN1980		2.2	79	306	302	None	75 kg	150 kg	A	
	Rare gases mixtures, compressed	2.2	UN1979		2.2		306	302	None	75 kg	150 kg	A	
	PC 318, see Octafluorocyclobutane												
	RDX and cyclotetramethylenetetranitramine, wetted or desensitized <i>see</i> RDX and HMX mix- tures, wetted or desensitized.												
G	RDX and HMX mixtures, wetted <i>with not less than 15 percent water by mass</i> or RDX and HMX mixtures, desensitized <i>with not less than 10 percent phlegmatizer by mass</i> .	1.1D	UN0391	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	RDX and Octogen mixtures, wetted or desensitized <i>see</i> RDX and HMX mixtures, wetted or de- sensitized <i>etc.</i>												
	RDX, <i>see</i> Cyclotrimethylene trinitramine, <i>etc</i>												
	Receptacles, small, containing gas (gas cartridges) <i>flammable, without release device, not re- fillable and not exceeding 1 L capacity</i> .	2.1	UN2037		2.1		306	304	None	1 kg	15 kg	B	40
	Receptacles, small, containing gas (gas cartridges) <i>non-flammable, without release device, not refillable and not exceeding 1 L capacity</i> .	2.2	UN2037		2.2		306	304	None	1 kg	15 kg	B	40
	Red phosphorus, <i>see</i> Phosphorus, amorphous												
	Refrigerant gas R 404A	2.2	UN3337		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Refrigerant gas R 407A	2.2	UN3338		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Refrigerant gas R 407B	2.2	UN3339		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Refrigerant gas R 407C	2.2	UN3340		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
D	Refrigerant gases, n.o.s.	2.2	UN1078		2.2	T50	306	304	314, 315.	75 kg	150 kg	A	
	Refrigerant gases, n.o.s. or Dispersant gases, n.o.s.	2.1	NA1954		2.1	T50	306	304	314, 315.	Forbidden	150 kg	D	40
	Refrigerating machines, containing <i>flammable, non-toxic, liquefied gas</i>	2.1	UN3358		2.1		306	306	306	Forbidden	Forbidden	C	40
	Refrigerating machines, containing <i>non-flammable, non-toxic, or ammonia solution (UN2672)</i>	2.2	UN2857		2.2	A53	306, 307.	306	306, 307.	450 kg	450 kg	A	
	Regulated medical waste	6.2	UN3291	II	6.2	A13	134	197	197	No limit	No limit	A	40
	Release devices, explosive	1.4S	UN0173	I	1.4S		None	62	None	25 kg	100 kg	05	
	Resin solution, <i>flammable</i>	3	UN1866	I	3	B52, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	

[illegible]

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
+ A D	Self-defense spray, non-pressurized	9	NA3334	III	9	A37	155	203	None	No limit	No limit	A	
G	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	UN3188	III	4.2, 8	IB2	None	202	243	1 L	5 L	C	
G	Self-heating liquid, corrosive, organic, n.o.s.	4.2	UN3185	III	4.2, 8	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, inorganic, n.o.s.	4.2	UN3186	III	4.2, 8	IB2	None	203	241	5 L	60 L	C	
G	Self-heating liquid, organic, n.o.s.	4.2	UN3183	III	4.2	IB2	None	202	241	1 L	5 L	C	
G	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	UN3187	III	4.2	IB2	None	203	241	1 L	60 L	C	
G	Self-heating liquid, toxic, organic, n.o.s.	4.2	UN3184	III	4.2, 6.1	IB2	None	203	241	5 L	60 L	C	
G	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	UN3192	III	4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
G	Self-heating solid, corrosive, organic, n.o.s.	4.2	UN3126	III	4.2, 8	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-heating solid, inorganic, n.o.s.	4.2	UN3190	III	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	C	
G	Self-heating solid, organic, n.o.s.	4.2	UN3088	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Self-heating solid, oxidizing, n.o.s.	4.2	UN3127	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	C	
G	Self-heating solid, toxic, inorganic, n.o.s.	4.2	UN3191	III	4.2, 5.1	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
G	Self-heating solid, toxic, organic, n.o.s.	4.2	UN3128	III	4.2, 6.1	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-heating solid, toxic, organic, n.o.s.	4.2	UN3128	III	4.2, 6.1	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
G	Self-propelled vehicle, see Engines or Batteries etc	4.1	UN3221	III	4.1	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	C	
G	Self-reactive liquid type B	4.1	UN3231	III	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive liquid type C	4.1	UN3223	III	4.1	53	None	224	None	Forbidden	Forbidden	D	52, 53
G	Self-reactive liquid type D	4.1	UN3225	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type E	4.1	UN3227	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type F	4.1	UN3229	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type G	4.1	UN3231	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type H	4.1	UN3233	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type I	4.1	UN3235	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type J	4.1	UN3237	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type K	4.1	UN3239	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type L	4.1	UN3241	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type M	4.1	UN3243	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type N	4.1	UN3245	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type O	4.1	UN3247	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type P	4.1	UN3249	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type Q	4.1	UN3251	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type R	4.1	UN3253	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type S	4.1	UN3255	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type T	4.1	UN3257	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type U	4.1	UN3259	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type V	4.1	UN3261	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type W	4.1	UN3263	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type X	4.1	UN3265	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type Y	4.1	UN3267	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive liquid type Z	4.1	UN3269	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type A	4.1	UN3271	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type B	4.1	UN3273	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type C	4.1	UN3275	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type D	4.1	UN3277	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type E	4.1	UN3279	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type F	4.1	UN3281	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type G	4.1	UN3283	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type H	4.1	UN3285	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type I	4.1	UN3287	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type J	4.1	UN3289	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type K	4.1	UN3291	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type L	4.1	UN3293	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type M	4.1	UN3295	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type N	4.1	UN3297	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type O	4.1	UN3299	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type P	4.1	UN3301	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type Q	4.1	UN3303	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type R	4.1	UN3305	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type S	4.1	UN3307	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type T	4.1	UN3309	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type U	4.1	UN3311	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type V	4.1	UN3313	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type W	4.1	UN3315	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type X	4.1	UN3317	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type Y	4.1	UN3319	III	4.1		None	224	None	10 L	10 L	D	52, 53
G	Self-reactive solid type Z	4.1	UN3321	III	4.1		None	224	None	10 L	10 L	D	52, 53

G	Self-reactive solid type D	UN3226	4.1	II	4.1	None	224	None	5 kg	10 kg	D	52, 53
G	Self-reactive solid type D, temperature controlled	UN3236	4.1	II	4.1	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type E	UN3228	4.1	II	4.1	None	224	None	10 kg	25 kg	D	52, 53
G	Self-reactive solid type E, temperature controlled	UN3238	4.1	II	4.1	None	224	None	Forbidden	Forbidden	D	2, 52, 53
G	Self-reactive solid type F	UN3230	4.1	II	4.1	None	224	None	10 kg	25 kg	D	52, 53
G	Self-reactive solid type F, temperature controlled	UN3240	4.1	II	4.1	None	224	None	Forbidden	Forbidden	D	2, 52, 53
	Shale oil	UN1288	3	I	3	None	201	243	1 L	30 L	B	53
				II	3	150	202	242	5 L	60 L	B	
				III	3	150	203	242	60 L	220 L	A	
	<i>Shaped charges, see Charges, shaped, etc</i>											
	Signal devices, hand	UN0191	1.4G	II	1.4G	None	62	None	Forbidden	75 kg	06	
	Signal devices, hand	UN0373	1.4S	II	1.4S	None	62	None	25 kg	100 kg	05	
	Signals, distress, ship	UN0194	1.1G	II	1.1G	None	62	None	Forbidden	Forbidden	07	
	Signals, distress, ship	UN0195	1.3G	II	1.3G	None	62	None	Forbidden	75 kg	07	
	<i>Signals, highway, see Signal devices, hand</i>											
	Signals, railway track, explosive	UN0192	1.1G	II	1.1G	None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	UN0193	1.4S	II	1.4S	None	62	None	25 kg	100 kg	05	
	Signals, railway track, explosive	UN0492	1.3G	II	1.3G	None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	UN0493	1.4G	II	1.4G	None	62	None	Forbidden	75 kg	06	
	<i>Signals, ship distress, water-activated, see Contrivances, water-activated, etc</i>											
	Signals, smoke	UN0196	1.1G	II	1.1G	None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	UN0197	1.4G	II	1.4G	None	62	None	Forbidden	75 kg	06	
	Signals, smoke	UN0313	1.2G	II	1.2G	None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	UN0487	1.3G	II	1.3G	None	62	None	Forbidden	Forbidden	07	
	Silane	UN2203	2.1	II	2.1	None	302	None	Forbidden	Forbidden	E	40, 57, 104
	<i>Silicofluoric acid, see Fluorosilicic acid</i>											
	<i>Silicon chloride, see Silicon tetrachloride</i>											
	Silicon powder, amorphous	UN1346	4.1	III	4.1	None	213	240	25 kg	100 kg	A	74
	Silicon tetrachloride	UN1818	8	II	8	154	202	242	1 L	30 L	C	40
	Silicon tetrafluoride	UN1859	2.3		2.3, 8	None	302	None	Forbidden	Forbidden	D	40
	<i>Silver acetylide (dry)</i>	Forbidden	6.1	II	6.1	153	212	242	25 kg	100 kg	A	
	Silver arsenite	UN1683	6.1	II	6.1	153	212	242	25 kg	100 kg	A	
	<i>Silver azide (dry)</i>	Forbidden										
	<i>Silver chloride (dry)</i>	Forbidden										
	Silver cyanide	UN1684	6.1	II	6.1	153	212	242	25 kg	100 kg	A	40, 52
	<i>Silver fulminate (dry)</i>	Forbidden										
	Silver nitrate	UN1493	5.1	II	5.1	152	212	242	5 kg	25 kg	A	
	<i>Silver oxalate (dry)</i>	Forbidden										
	<i>Silver picrate (dry)</i>	Forbidden										
	Silver picrate, wetted with not less than 30 percent water, by mass	UN1347	4.1	I	4.1	None	211	None	Forbidden	Forbidden	D	28, 36
	Sludge, acid	UN1906	8	II	8	None	202	242	Forbidden	30 L	C	14
D	Smokeless powder for small arms (100 pounds or less)	NA3178	4.1	I	4.1	None	171	None	Forbidden	7.3 kg	A	
	Soda lime with more than 4 percent sodium hydroxide	UN1907	8	III	8	154	213	240	25 kg	100 kg	A	
	Sodium	UN1428	4.3	I	4.3	None	211	244	Forbidden	15 kg	D	52
	Sodium aluminate, solid	UN2812	8	III	8	154	213	240	25 kg	100 kg	A	
	Sodium aluminate, solution	UN1819	8	II	8	154	202	242	1 L	30 L	A	
				III	8	154	203	241	5 L	60 L	A	
	Sodium aluminum hydride	UN2835	4.3	II	4.3	151	212	242	Forbidden	50 kg	E	52
	Sodium ammonium vanadate	UN2863	6.1	II	6.1	153	212	242	25 kg	100 kg	A	
	Sodium arseniate	UN2473	6.1	III	6.1	153	213	240	100 kg	200 kg	A	
	Sodium arsenate	UN1685	6.1	II	6.1	153	212	242	25 kg	100 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
	Sodium arsenite, aqueous solutions	6.1	UN1686	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A		
	Sodium arsenite, solid	6.1	UN2027	III	6.1	IB3, T4, TP2	153	203	241	60 L	220 L	A		
	Sodium azide	6.1	UN1687	II	6.1	IB8, IP2, IP4, TP33	153	212	242	25 kg	100 kg	A		
	Sodium bifluoride, see Sodium hydrogendifluoride												36, 52, 91	
	Sodium bisulfite, solution, see Bisulfites, aqueous solutions, n.o.s.													
	Sodium borohydride	4.3	UN1426	I	4.3	N40	None	211	242	Forbidden	15 kg	E	52	
	Sodium borohydride and sodium hydroxide solution, with not more than 12 percent sodium borohydride and not more than 40 percent sodium hydroxide by mass.	8	UN3320	II	8	B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	52	
	Sodium bromate			III	8	B2, IB3, N34, T4, TP2	154	203	241	5 L	60 L	A	52	
	Sodium bromate	5.1	UN1494	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58	
	Sodium cacodylate	6.1	UN1688	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52	
	Sodium carbonate peroxyhydrate	5.1	UN3378	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 48, 75	
	Sodium chlorate			III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75	
	Sodium chlorate	5.1	UN1495	II	5.1	A9, IB8, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58	
	Sodium chlorate, aqueous solution	5.1	UN2428	II	5.1	A2, IB2, T4, TP1	152	202	241	1 L	5 L	B	56, 58, 133	
	Sodium chlorate mixed with dinitrotoluene, see Explosive blasting, type C			III	5.1	A2, IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 69, 133	
	Sodium chlorite		5.1	UN1496	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	None	212	242	5 kg	25 kg	A	56, 58
	Sodium chloroacetate	6.1	UN2659	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		
	Sodium cuprocyanide, solid	6.1	UN2316	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	52	
	Sodium cuprocyanide, solution	6.1	UN2317	I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40, 52	
	Sodium cyanide, solid	6.1	UN1689	I	6.1	B69, B77, IB7, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	B	52	
	Sodium cyanide solution	6.1	UN3414	I	6.1	B69, B77, N74, N75, T14, TP2, TP13	None	201	243	1 L	30 L	B	52	
					II	6.1	B69, B77, IB2, N74, N75, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	52
					III	6.1	B69, B77, IB3, N74, N75, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	52
	Sodium dichloroisocyanurate or Sodium dichloro-s-triazinetriene, see Dichloroisocyanuric acid etc.													
	Sodium dinitro-o-cresolate, dry or wetted with less than 15 percent water, by mass		1.3C	UN2034	II	1.3C	162, A8, A19, N41, N84	None	62	None	Forbidden	Forbidden	10	5E
	Sodium dinitro-o-cresolate, wetted with not less than 10% water, by mass		4.1	UN3369	I	4.1	23, A8, A19, A20, N41	None	211	None	0.5 kg	0.5 kg	E	36
Sodium dinitro-o-cresolate, wetted with not less than 15 percent water, by mass		4.1	UN1348	I	4.1	A19, A20, IB6, IP2, T3, TP33	None	211	None	1 kg	15 kg	E	28, 36	
Sodium dithionite or Sodium hydrosulfite		4.2	UN1384	II	4.2	IB8, IP3, T1, TP33	None	212	241	15 kg	50 kg	E	13	
Sodium fluoride, solid		6.1	UN1690	III	6.1	IB3, T4, TP1	153	213	240	100 kg	200 kg	A	52	
Sodium fluoride solution		6.1	UN3415	III	6.1	IB7, IP1, T6, TP33	153	203	241	60 L	220 L	A	52	
Sodium fluoroacetate		6.1	UN2629	I	6.1	IB8, IP3, T1, TP33	None	211	242	5 kg	50 kg	E		
Sodium fluoroarsenate		6.1	UN2674	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52	
Sodium hydride, see Sodium hydroxide, solid														
Sodium hydride		4.3	UN1427	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52	

Sodium hydrogendifluoride	8	UN2439	II	8	IB8, IP2, IP4, N3, N34, T3, TP33	154	212	240	15 kg	50 kg	A	12, 25, 40, 52
Sodium hydrosulfide, with less than 25 percent water of crystallization	4.2	UN2318	II	4.2	A7, A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	.....
Sodium hydrosulfide with not less than 25 percent water of crystallization	8	UN2949	II	8	A7, IB8, IP2, IP4, T7, TP2	154	212	240	15 kg	50 kg	A	52
Sodium hydrosulfite, see Sodium dithionite .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium hydroxide, solid	8	UN1823	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
Sodium hydroxide solution	8	UN1824	II	8	B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	.....
.....	.....	.....	III	8	IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	.....
Sodium hypochlorite, solution, see Hypochlorite solutions etc .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium methyle	4.2	UN1431	II	4.2, 8	A7, A19, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	.....
Sodium methyle solutions in alcohol	3	UN1289	II	3, 8	IB2, T7, TP1, TP8	150	202	243	1 L	5 L	B	.....
.....	8	UN1825	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	.....
Sodium monoxide .....	.....	.....	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	.....
Sodium nitrate	5.1	UN1498	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
Sodium nitrate and potassium nitrate mixtures	5.1	UN1499	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
Sodium nitrite	5.1	UN1500	III	5.1, 6.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
Sodium pentachlorophenate	6.1	UN2567	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	.....
Sodium perborate monohydrate	5.1	UN3377	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
Sodium perchlorate	5.1	UN1502	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Sodium permanganate	5.1	UN1503	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Sodium peroxide	5.1	UN1504	I	5.1	A20, IB5, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
Sodium peroxoborate, anhydrous	5.1	UN3247	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 25
Sodium persulfate	5.1	UN1505	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
Sodium phosphide	4.3	UN1432	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Sodium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	UN0235	II	1.3C	.....	None	62	None	Forbidden	Forbidden	10	5E
Sodium picramate, wetted with not less than 20 percent water, by mass	4.1	UN1349	I	4.1	23, A8, A19, N41	None	211	None	Forbidden	15 kg	E	28, 36
Sodium picryl peroxide	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium potassium alloys, see Potassium sodium alloys .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium selenate, see Selenates or Selenites .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sodium sulfide, anhydrous or Sodium sulfide with less than 30 percent water of crystallization ..	4.2	UN1385	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
Sodium sulfide, hydrated with not less than 30 percent water	8	UN1849	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	26
Sodium superoxide	5.1	UN2547	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	E	13, 52, 66, 75
Sodium tetranitride	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Solids containing corrosive liquid, n.o.s.	8	UN3244	II	8	49, IB5, T3, TP33	154	212	240	15 kg	50 kg	B	40
Solids containing flammable liquid, n.o.s.	4.1	UN3175	II	4.1	47, IB6, IP2, T3, TP33	151	212	240	15 kg	50 kg	B	.....
Solids containing toxic liquid, n.o.s.	6.1	UN3243	II	6.1	48, IB2, T2, TP33	153	212	240	25 kg	100 kg	B	40
Sounding devices, explosive	1.2F	UN0204	II	1.2F	.....	None	62	None	Forbidden	Forbidden	08	.....
Sounding devices, explosive	1.1F	UN0296	II	1.1F	.....	None	62	None	Forbidden	Forbidden	08	.....
Sounding devices, explosive	1.1D	UN0374	II	1.1D	.....	None	62	None	Forbidden	Forbidden	07	.....
Sounding devices, explosive	1.2D	UN0375	II	1.2D	.....	None	62	None	Forbidden	Forbidden	07	.....
Spirits of salt, see Hydrochloric acid .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Squibs, see Igniters etc .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stannic chloride, anhydrous	8	UN1827	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	.....
Stannic chloride pentahydrate	8	UN2440	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identi- fication Num- bers	PG	Label Codes	Special provisions (\$172.102)	Packaging (\$173.***)			Quantity limitations		(10) Vessel stow- age		
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other	
														(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
G	Stannic phosphide	4.3	UN1433	I	4.3, 6.1.	A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85	
	Steel swarf, see Ferrous metal borings, etc	2.3	UN2676		2.3, 2.1.	1	None	304	None	Forbidden	Forbidden	D	40	
	Silbire													
	Storage batteries, wet, see Batteries, wet etc	6.1	UN1891	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
	Strontium arsenite													
	Strontium chlorate	5.1	UN1506	II	5.1	A1, A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58	
	Strontium nitrate	5.1	UN1507	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A		
	Strontium perchlorate	5.1	UN1508	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58	
	Strontium peroxide	5.1	UN1509	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75	
	Strontium phosphide	4.3	UN2013	I	4.3, 6.1.	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85	
Strychnine or Strychnine salts	6.1	UN1892	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40		
G	Styphnic acid, see Trinitroresorcinol, etc	3	UN2055 UN0357	III II	3 1.1L	B1, IB3, T2, TP1	150 None	203 62	242 None	60 L Forbidden	220 L Forbidden	A	8E, 14E, 15E, 17E	
	Styrene monomer, stabilized													
	Substances, explosive, n.o.s.													
	Substances, explosive, n.o.s.	1.2L	UN0358	II	1.2L	101	None	62	None	Forbidden	Forbidden	Forbidden	8E, 14E, 15E, 17E	
	Substances, explosive, n.o.s.	1.3L	UN0359	II	1.3L	101	None	62	None	Forbidden	Forbidden	Forbidden	8E, 14E, 15E, 17E	
	G	Substances, explosive, n.o.s.	1.1A 1.1C 1.1D 1.1G 1.3C 1.3G 1.4C 1.4D 1.4S 1.4G 1.5D	UN0473 UN0474 UN0475 UN0476 UN0477 UN0478 UN0479 UN0480 UN0481 UN0485 UN0482 UN2780	II II II II II II II II II II	1.1A 1.1C 1.1D 1.1G 1.3C 1.3G 1.4C 1.4D 1.4S 1.4G 1.5D	101, 111 101 101 101 101 101 101 101 101 101	None None None None None None None None None None	62 62 62 62 62 62 62 62 62 62	None None None None None None None None None None	Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden	Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden Forbidden	12 10 10 08 10 08 09 05 08 10 B	40 40 40 40 40 40 40 40 40 40
		Substances, explosive, n.o.s.												
		Substances, explosive, n.o.s.												
		Substances, explosive, n.o.s.												
		Substances, explosive, n.o.s.												
Substances, explosive, n.o.s.														
Substances, explosive, n.o.s.														
Substances, explosive, n.o.s.														
Substances, explosive, n.o.s.														
Substituted nitrophenol pesticides, liquid, flammable, toxic, flash point less than 23 degrees C		6.1													UN3014	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	60 L	B	40
G	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C	6.1	UN3013	I II III	6.1, 3 6.1 6.1	T14, TP2, TP13, TP27	None None None	201 202 203	243 243 241	1 L 5 L 60 L	30 L 60 L 220 L	B B A	40 40 40 40 40 40 40 40 40 40	
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, liquid, toxic, flash point not less than 23 degrees C													
	Substituted nitrophenol pesticides, solid, toxic													6.1	UN2779	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40

				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Forbidden			III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
D	Sucrose octanitrate (dry)			III	9	10, IB8, IP2	None	None	240	No limit	No limit	A	19, 74
I	Sulfamic acid	9	UN1350	III	4.1	30, IB8, IP3, T1, TP33	None	None	240	No limit	No limit	A	19, 74
	Sulfur and chlorate, loose mixtures of			I	8	5, A3, A7, A10, B10, B77, N34, T20, TP2, TP12	None	201	243	Forbidden	2.5 L	C	40
	Sulfur chlorides	8	UN1828										
	Sulfur dichloride, see Sulfur chlorides												
	Sulfur dioxide	2.3	UN1079		2.3, 8	3, B14, T50, TP19	None	304	314, 315	Forbidden	Forbidden	D	40
	Sulfur dioxide solution, see Sulfurous acid												
	Sulfur hexafluoride	2.2	UN1080		2.2		306	304	314	75 kg	150 kg	A	
D	Sulfur, molten	9	NA2448	III	9	30, IB3, T1, TP3	None	213	247	Forbidden	Forbidden	C	61
I	Sulfur, molten	4.1	UN2448	III	4.1	30, IB1, T1, TP3	None	213	247	Forbidden	Forbidden	C	61
	Sulfur tetrafluoride	2.3	UN2418		2.3, 8	2, B9, B14, B32, B49, B74, B77, N34, T20, TP2, TP12, TP13, TP25, TP26, TP38, TP45	None	302	245	Forbidden	Forbidden	D	40, 52
+	Sulfur trioxide, stabilized	8	UN1829	I	8, 6.1		None	227	244	Forbidden	Forbidden	A	40
	Sulfuretted hydrogen, see Hydrogen sulfide												
	Sulfuric acid, fuming with less than 30 percent free sulfur trioxide			I	8	B84, N34, T20, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	C	14, 40
	Sulfuric acid, fuming with 30 percent or more free sulfur trioxide	8	UN1831	I	8, 6.1	2, A3, A6, A7, B9, B14, B32, B74, B77, B84, N34, T20, TP2, TP12, TP13	None	227	244	Forbidden	Forbidden	C	14, 40
	Sulfuric acid, spent	8	UN1832	II	8	A3, A7, B2, B83, B84, IB2, N34, T8, TP2, TP12	None	202	242	Forbidden	30 L	C	14
	Sulfuric acid with more than 51 percent acid	8	UN1830	II	8	A3, A7, B3, B83, B84, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	C	14
	Sulfuric acid with not more than 51% acid	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12	154	202	242	1 L	30 L	B	
	Sulfuric and hydrofluoric acid mixtures, see Hydrofluoric and sulfuric acid mixtures												
	Sulfuric anhydride, see Sulfur trioxide, stabilized												
	Sulfurous acid	8	UN1833	II	8	B3, IB2, T7, TP2	154	202	242	1 L	30 L	B	40
+	Sulfuryl chloride	8	UN1834	I	8, 6.1	1, B6, B9, B10, B14, B30, B74, B77, N34, T22, TP2, TP12, TP38, TP44	None	226	244	Forbidden	Forbidden	C	40
	Sulfuryl fluoride	2.3	UN2191		2.3		None	304	314, 315	Forbidden	Forbidden	D	40
	Tars, liquid including road asphalt and oils, bitumen and cut backs	3	UN1999	II	3	149, B13, IB2, T3, TP3, TP29	150	202	242	5 L	60 L	B	
	Tear gas candles	6.1	UN1700	III	3	B1, B13, IB3, T1, TP3	150	203	242	60 L	220 L	A	
	Tear gas cartridges, see Ammunition, tear-producing, etc			II	6.1, 4.1		None	340	None	Forbidden	50 kg	D	40
D	Tear gas devices with more than 2 percent tear gas substances, by mass	6.1	NA1693	I	6.1		None	340	None	Forbidden	Forbidden	D	40
	Tear gas devices, with not more than 2 percent tear gas substances, by mass, see Aerosols, etc			II	6.1		None	340	None	Forbidden	Forbidden	D	40
G	Tear gas grenades, see Tear gas candles												
	Tear gas substances, liquid, n.o.s.	6.1	UN1693	I	6.1	IB2	None	201	None	Forbidden	Forbidden	D	40
G	Tear gas substance, solid, n.o.s.	6.1	UN3448	II	6.1	T6, TP33	None	202	None	Forbidden	5 L	D	40
	Tellurium compound, n.o.s.	6.1	UN3284	II	6.1	IB8, IP2, IP4, T3, TP33	None	211	242	Forbidden	25 kg	D	40
				I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	(8A)	(8B)	(8C)	(9A)	(9B)	(9A)	(9B)	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
A I W				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B		
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A		
		2.3	UN2195		2.3, 8	B1, IB3, T4, TP1, TP29	None	302	None	Forbidden	Forbidden	D	40	
		3	UN2319	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
		Forbidden	UN2541	III	3	IB3, T4, TP1	153	203	241	60 L	220 L	A		
		6.1	UN2504	III	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40	
		6.1	UN1702	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40	
		6.1	UN1897	III	6.1	IB2, T7, TP2	153	212	242	25 kg	100 kg	D	40	
		6.1	UN1704	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
		Forbidden	UN2320	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A		
		2.2	UN3159		2.2	IB3, T4, TP1	306	304	314, 315	75 kg	150 kg	A		
		2.1	UN1081			2.1	None	306	304	None	Forbidden	150 kg	E	40
		2.2	UN1982		2.2	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
		3	UN2498	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
		3	UN2056	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
		3	UN2943	III	3	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A		
		8	UN2698	III	8	IB2, T4, TP1	150	202	242	5 L	60 L	B		
		3	UN2410	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
		3	UN2412	II	3	B2, IB8, IP2, IP4, TP33	154	213	240	15 kg	50 kg	A	52	
		8	UN3423	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	52	
		8	UN1835	III	8	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	52	
		Forbidden	UN2749	I	3	A7, T14, TP2	None	201	243	Forbidden	30 L	D		
		Forbidden	UN0207	II	1.1D	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP44	None	62	None	Forbidden	Forbidden	10		
		5.1	UN1510	I	5.1	6.1	None	227	None	Forbidden	Forbidden	D	40, 66	
	2,3,4,6-Tetranitrophenol	Forbidden												
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden												
	2,3,4,6-Tetranitrophenyl nitramine	Forbidden												
	Tetranitroresorcinol (dry)	Forbidden												
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden												
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden												
	Tetrapropylorthotitanate	3	UN2413	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A		
	Tetrazene, see Guanlyl nitrosaminoquanyltetrazene													
	Tetrazine (dry)	Forbidden												
	Tetrazol-1-acetic acid	1.4C	UN0407	II	1.4C		None	62	None	Forbidden	75 kg	09		
	1H-Tetrazole	1.1D	UN0504		1.1D		None	62	None	Forbidden	Forbidden	B	1E, 5E	
	Tetrazolyl azide (dry)	Forbidden												
	Tetryl, see Trinitrophenylmethylnitramine													
	Textile waste, wet	4.2	UN1857	III	4.2	IB6, IP2, T3, TP33	151	213	240	Forbidden	Forbidden	A		
	Thallium chlorate	5.1	UN2573	II	5.1, 6.1	IB8, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58	
	Thallium compounds, n.o.s.	6.1	UN1707	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A		
	Thallium nitrate	6.1	UN2727	II	6.1, 5.1	IB6, IP2, T3, TP33	153	212	242	5 kg	25 kg	A		
	4-Thiapentanal	6.1	UN2785	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	D	25, 49	
	Thioacetic acid	3	UN2436	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Thiocarbamate pesticide, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2772	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40	

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Thiocarbamate pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3005	II	3, 6.1	IB2, T11, TP13, TP27	150	202	243	1 L	60 L	B	40
.....			I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
.....			I	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....			III	6.1, 3	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Thiocarbamate pesticide, liquid, toxic	6.1	UN3006	I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
.....			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Thiocarbamate pesticides, solid, toxic	6.1	UN2771	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
.....			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
.....			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Thiocarbonylchloride, see Thiophosgene												
Thioglycol	6.1	UN2966	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
Thioglycolic acid	8	UN1940	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	.....
Thiolactic acid	6.1	UN2936	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	.....
Thionyl chloride	8	UN1836	I	8	B6, B10, N34, T10, TP2, TP12, TP13	None	201	243	Forbidden	Forbidden	C	40
Thiophene	3	UN2414	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Thiophosgene	6.1	UN2474	II	6.1	2, B9, B14, B32, B74, N33, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
Thiophosphoryl chloride	8	UN1837	II	8	A3, A7, B2, B8, B25, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
Thiourea dioxide	4.2	UN3341	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	D	.....
.....			III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	.....
Tin chloride, fuming, see Stannic chloride, anhydrous												
Tin perchloride or Tin tetrachloride, see Stannic chloride, anhydrous												
Tinctures, medicinal												
Tinning flux, see Zinc chloride												
Titanium disulphide	3	UN1293	II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	.....
.....			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
.....	4.2	UN3174	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	A	.....
Titanium hydride	4.1	UN1871	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	241	15 kg	50 kg	E	.....
Titanium powder, dry	4.2	UN2546	I	4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	211	242	Forbidden	Forbidden	D	.....
.....			II	4.2	IB8, IP3, T1, TP33	None	212	241	15 kg	50 kg	D	.....
.....			III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	.....
Titanium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.	4.1	UN1352	II	4.1	A19, A20, IB6, IP2, N34, T3, TP33	None	212	240	15 kg	50 kg	E	74
Titanium sponge granules or Titanium sponge powders	4.1	UN2878	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	D	74
Titanium tetrachloride	8	UN1838	II	8, 6.1	2, B7, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
Titanium trichloride mixtures	8	UN2869	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	40
.....			III	8	A7, IB8, IP3, N34, T1, TP33	154	213	240	25 kg	100 kg	A	40
Titanium trichloride, pyrophoric or Titanium trichloride mixtures, pyrophoric	4.2	UN2441	I	4.2, 8	N34, T1, TP33	None	181	244	Forbidden	Forbidden	D	40
TNT mixed with aluminum, see Tritonal												
TNT, see Trinitrotoluene, etc												
Toluene	3	UN1294	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Toluene diisocyanate	6.1	UN2078	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	D	25, 40
Toluene sulfonic acid, see Alkyl, or Aryl sulfonic acid etc												
Toluidines, liquid	6.1	UN1708	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Toluidines, solid	6.1	UN3451	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	2,4-Toluylenediamine, solid or 2,4-Toluenediamine, solid	6.1	UN1709	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	2,4-Toluylenediamine solution or 2,4-Toluenediamine solution	6.1	UN3418	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Torpedoes, liquid fueled, with inert head	1.3J	UN0450	II	1.3J			62	None	Forbidden	Forbidden	04	23E
	Torpedoes, liquid fueled, with or without bursting charge	1.1J	UN0449	II	1.1J			62	None	Forbidden	Forbidden	04	23E
	Torpedoes with bursting charge	1.1E	UN0329	II	1.1E			62	None	Forbidden	Forbidden	03	
	Torpedoes with bursting charge	1.1F	UN0330	II	1.1F			62	None	Forbidden	Forbidden	08	
	Torpedoes with bursting charge	1.1D	UN0451	II	1.1D			62	None	Forbidden	Forbidden	03	
	Toxic by inhalation liquid, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3381	I	6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Toxic by inhalation liquid, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3382	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP4527, TP38, TP4513	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, flammable, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3383	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, flammable, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3384	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, water-reactive, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3385	I	6.1, 4.3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, water-reactive, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3386	I	6.1, 4.3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3387	I	6.1, 5.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50.	6.1	UN3388	I	6.1, 5.1	2, B9, B14, B32, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50.	6.1	UN3389	I	6.1, 8	1, B9, B14, B30, B72, T22, TP2, TP13, TP27, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
G	Toxic by inhalation liquid, corrosive, inorganic, n.o.s.	6.1	UN3390	I	6.1, 8	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
G	Toxic liquid, corrosive, inorganic, n.o.s.		UN3289	I	6.1, 8	T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	A	
G	Toxic liquid, inorganic, n.o.s.		UN3287	II	6.1, 8	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	A	
				I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	A	
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	A	
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	
G	Toxic liquids, corrosive, organic, n.o.s.	6.1	UN2927	I	6.1, 8	T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	6.1, 8	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	B	40

G	Toxic liquids, flammable, organic, n.o.s.	6.1	UN2929	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
G	Toxic, liquids, organic, n.o.s.	6.1	UN2810	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Toxic liquids, oxidizing, n.o.s.	6.1	UN3122	I	6.1, 5.1.	A4	None	201	243	Forbidden	2.5 L	C	
				II	6.1, 5.1.	IB2	153	202	243	1 L	5 L	C	
G	Toxic liquids, water-reactive, n.o.s.	6.1	UN3123	I	6.1, 4.3.	A4	None	201	243	Forbidden	1 L	E	40
				II	6.1, 4.3.	IB2	None	202	243	1 L	5 L	E	40
G	Toxic solid, corrosive, inorganic, n.o.s.	6.1	UN3290	I	6.1, 8	IB7, T6, TP33	None	211	242	1 kg	25 kg	A	
				II	6.1, 8	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	A	
G	Toxic solid, inorganic, n.o.s.	6.1	UN3288	I	6.1	IB7, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
G	Toxic solids, corrosive, organic, n.o.s.	6.1	UN2928	I	6.1, 8	IB7, T6, TP33	None	211	242	1 kg	25 kg	B	40
				II	6.1, 8	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	B	40
G	Toxic solids, flammable, organic, n.o.s.	6.1	UN2930	I	6.1, 4.1.	IB6, T6, TP33	None	211	242	1 kg	15 kg	B	
				II	6.1, 4.1.	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	B	
G	Toxic solids, organic, n.o.s.	6.1	UN2811	I	6.1	IB7, T6, TP33	None	211	242	5 kg	50 kg	B	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
G	Toxic solids, oxidizing, n.o.s.	6.1	UN3086	I	6.1, 5.1.	T6, TP33	None	211	242	1 kg	15 kg	C	
				II	6.1, 5.1.	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	C	
G	Toxic solids, self-heating, n.o.s.	6.1	UN3124	I	6.1, 5.1.	A5, T6, TP33	None	211	242	5 kg	15 kg	D	40
				II	6.1, 4.2.	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	40
G	Toxic solids, water-reactive, n.o.s.	6.1	UN3125	I	6.1, 4.3.	A5, T6, TP33	None	211	242	5 kg	15 kg	D	40
				II	6.1, 4.3.	IB6, IP2, T3, TP33	153	212	242	15 kg	50 kg	D	40
G	Toxins, extracted from living sources, liquid, n.o.s.	6.1	UN3172	I	6.1	141	None	201	243	1 L	30 L	B	40
				II	6.1	141, IB2	None	202	243	5 L	60 L	B	40
				III	6.1	141, IB3	153	203	241	60 L	220 L	B	40
				I	6.1	141, IB7, IP1, T6, TP33	None	211	243	5 kg	50 kg	B	
				II	6.1	141, IB8, IP2, IP4, T3, TP33	None	212	243	25 kg	100 kg	B	
				III	6.1	141, IB8, IP3, T1, TP33	153	213	241	100 kg	200 kg	A	
D	Toy Caps	1.4S	NA0337	II	1.4S		None	62	None	25 kg	100 kg	05	
	Tracers for ammunition	1.3G	UN0212	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Tracers for ammunition	1.4G	UN0306	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Tractors, see Vehicle, etc												
	Tri-(b-nitroxyethyl) ammonium nitrate	6.1	UN2609	III	6.1	IB3	153	203	241	60 L	220 L	A	13
	Triallyl borate	3	UN2610	III	3, 8	B1, IB3, T4, TP1	None	203	242	5 L	60 L	A	40
	Triallylamine	3	UN2764	I	3, 6.1	T14, TP2, TP13	None	201	243	Forbidden	30 L	B	40
	Triazine pesticides, liquid, flammable, toxic, flash point less than 23 degrees C			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
				I	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifi-cation Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		(10) Vessel stow-age	
							Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
	Triazine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN2997	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
	Triazine pesticides, solid, toxic	6.1	UN2763	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
	Triethylamine			III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40	
	Trichloro-s-triazine dry, with more than 39 percent available chlorine, see Trichloroacetic acid, dry						None	211	242	Forbidden	Forbidden	D	136	
	Trichloroacetic acid	8	UN1839	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A		
	Trichloroacetic acid, solution	8	UN2564	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	B		
	Trichloroacetyl chloride			III	8	A3, A6, A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	B	8	
+	Trichlorobenzene, liquid			III	8, 6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40	
	Trichlorobutene	6.1	UN2321	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	1,1,1-Trichloroethane	6.1	UN2322	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	25, 40	
	Trichloroethylene	6.1	UN1710	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40	
	Trichloroisocyanuric acid, dry	5.1	UN2468	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13	
	Trichloromethyl perchlorate	Forbidden					None	201	244	Forbidden	Forbidden	D	21, 28, 40, 49, 100	
	Trichlorosilane	4.3	UN1295	I	4.3, 3, 8	N34, T14, TP2, TP7, TP13	None	201	244	Forbidden	Forbidden	D		
	Tricresyl phosphate with more than 3 percent ortho isomer	6.1	UN2574	II	6.1	A3, IB2, N33, N34, T7, TP2	153	202	243	5 L	60 L	A		
	Triethyl phosphite	3	UN2323	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Triethylamine	3	UN1296	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40	
	Triethylenetetramine	8	UN2259	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	40, 52	
	Trifluoroacetic acid	8	UN2699	I	8	A3, A6, A7, B4, N3, N34, N36, T10, TP2, TP12	None	201	243	0.5 L	2.5 L	B	12, 40	
	Trifluoroacetyl chloride	2.3	UN3057		2.3, 8	2, B7, B9, B14, T50, TP21	None	304	314, 315	Forbidden	Forbidden	D	40	
	Trifluorochloroethylene, stabilized	2.3	UN1082		2.3	3, B14, T50	None	304	314, 315	Forbidden	Forbidden	D	40	
	Trifluoromethane or Refrigerant gas R 23	2.2	UN1984		2.2		306	304	314, 315	75 kg	150 kg	A		
	1,1,1-Trifluoroethane or Refrigerant gas, R 143a	2.1	UN2035		2.1	T50	306	304	314, 315	Forbidden	Forbidden	B	40	
	Trifluoromethane, refrigerated liquid	2.2	UN3136		2.2	T75, TP5	306	None	314, 315	50 kg	500 kg	D		
	2-Trifluoromethylaniline	6.1	UN2942	III	6.1	IB3	153	203	241	60 L	220 L	A		
	3-Trifluoromethylaniline	6.1	UN2948	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40	
	Trifluoromethoxy trinitrate	Forbidden												
	Trisobutylene	3	UN2324	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A		
	Trisopropyl borate	3	UN2616	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	A		
				III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		

D	Trimethoxysilane	6.1	NA9269	I	6.1, 3	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	E	40
	Trimethyl borate	3	UN2416	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	B	.....
	Trimethyl phosphite	3	UN2329	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden								Forbidden	Forbidden	D	25, 40
	Trimethylacetyl chloride	6.1	UN2438	I	6.1, 8, 3	2, B3, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden		
	Trimethylamine, anhydrous	2.1	UN1083	.....	2.1	T50	306	304	314, 315	Forbidden	150 kg	B	40
	Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass	3	UN1297	I	3, 8	T11, TP1	None	201	243	0.5 L	2.5 L	D	40, 135
	Trimethylene glycol diphosphate	.....		II	3, 8	B1, IB2, T7, TP1	150	202	243	1 L	5 L	B	40, 41
	Trimethylhexamethylene diisocyanate	.....		III	3, 8	B1, IB3, T7, TP1	150	203	242	5 L	60 L	A	40, 41
	1,3,5-Trimethylbenzene	3	UN2325	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	.....
	Trimethylchlorosilane	3	UN1298	II	3, 8	A3, A7, B77, IB2, N34, T7, TP2, TP13	150	202	243	1 L	5 L	E	40
	Trimethylcyclohexylamine	8	UN2326	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Trimethylene glycol diphosphate	Forbidden		III	6.1	IB3, T4, TP2, TP13	153	203	241	60 L	220 L	B	.....
	Trimethylhexamethylene diisocyanate	6.1	UN2328	III	6.1	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Trimethylhexamethylenediamines	8	UN2327	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
	Trimethyl nitromethane trinitrate	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitro-meta-cresol	1.1D	UN0216	II	1.1D		None	62	None	Forbidden	Forbidden		
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroacetic acid	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroacetone	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroacetone trinitrate	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroamine cobalt	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroaniline or Picramide	1.1D	UN0153	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitroanisole	1.1D	UN0213	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene (picryl chloride), wetted, with not less than 10% water by mass	4.1	UN3365	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene, wetted, with not less than 10% water, by mass	4.1	UN3367	I	4.1	23, A2, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrobenzene, dry or wetted with less than 30 percent water, by mass	1.1D	UN0214	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrobenzene, wetted with not less than 30 percent water, by mass	4.1	UN1354	I	4.1		None	211	None	0.5 kg	0.5 kg	E	.....
	Trinitrobenzenesulfonic acid	1.1D	UN0386	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitrobenzoic acid, dry or wetted with less than 30 percent water, by mass	1.1D	UN0388	I	1.1D	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzoic acid, wetted with not less than 10% water by mass	4.1	UN3368	I	4.1	23, A2, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	28
	Trinitrobenzoic acid, wetted with not less than 30 percent water, by mass	4.1	UN1355	I	4.1		None	211	None	0.5 kg	0.5 kg	E	.....
	Trinitrochlorobenzene or Picryl chloride	1.1D	UN0155	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitroethanol	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden		
	Trinitroethyltrinitrate	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrofluorenone	1.1D	UN0387	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitromethane	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	1,3,5-Trinitronaphthalene	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitronaphthalene	1.1D	UN0217	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrophenol	1.1D	UN0218	I	1.1D	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrophenol (picric acid), wetted, with not less than 10 percent water by mass	4.1	UN3364	I	4.1	23, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	.....
	Trinitrophenol (picric acid), wetted, with not less than 30 percent water, by mass	1.1D	UN0154	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitrophenol, wetted with not less than 30 percent water, by mass	4.1	UN1344	I	4.1		None	211	None	15 kg	15 kg	E	28, 36
	2,4,6-Trinitrophenyl guanidine (dry)	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	2,4,6-Trinitrophenyl nitramine	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	2,4,6-Trinitrophenyl trimethyl methyl nitramine trinitrate (dry)	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrophenylmethylnitramine or Tetryl	1.1D	UN0208	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitroresorcinol or Syphnic acid, dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass	1.1D	UN0219	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	Trinitroresorcinol, wetted or Syphnic acid, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass	1.1D	UN0394	II	1.1D		None	62	None	Forbidden	Forbidden	10	5E
	2,4,6-Trinitroso-3-methyl nitraminoanisole	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitroamine cobalt nitrate	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrobenzene and Trinitrobenzene mixtures or TNT and trinitrobenzene mixtures or TNT and hexanitrostilbene mixtures or Trinitrobenzene and hexanitrostilbene mixtures	1.1D	UN0398	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrobenzene mixtures containing Trinitrobenzene and Hexanitrostilbene or TNT mixtures containing trinitrobenzene and hexanitrostilbene	1.1D	UN0399	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrobenzene and hexanitrostilbene	1.1D	UN0209	II	1.1D		None	62	None	Forbidden	Forbidden	10	.....
	Trinitrobenzene or TNT, dry or wetted with less than 30 percent water, by mass	4.1	UN3366	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Trinitrobenzene (TNT), wetted, with not less than 10 percent water by mass	4.1		I	4.1		None	211	None	0.5 kg	0.5 kg	E	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions (\$172-102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Tritrotoluene, wetted with not less than 30 percent water, by mass	4.1	UN1356	I	4.1	23, A2, A8, A19, N41	None	211	None	0.5 kg	0.5 kg	E	28
	Tripropylamine	3	UN2260	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
	Tripropylene	3	UN2057	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Tris-(1-aziridinyl)phosphine oxide, solution	6.1	UN2501	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Tris, bis-bifluoroamino diethoxy propane (TVOPA)	Forbidden		III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Tritonal	1;1D	UN0390	II	1;1D	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Tungsten hexafluoride	2.3	UN2196		2.3, 8	2	None	62	None	Forbidden	Forbidden	10	
	Turpentine	3	UN1299	III	3	B1, IB3, T2, TP1	150	203	242	Forbidden	Forbidden	D	40
	Turpentine substitute	3	UN1300	I	3	T11, TP1, TP8, TP27	None	201	243	60 L	220 L	A	
	Undecane			II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Urea hydrogen peroxide	3	UN2330	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Urea hydrogen peroxide	5.1	UN1511	III	5.1, 8	A1, A7, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13
	Urea nitrate, dry or wetted with less than 20 percent water, by mass	1;1D	UN0220	II	1;1D	119	None	62	None	Forbidden	Forbidden	10	
	Urea nitrate, wetted, with not less than 10 percent water by mass	4.1	UN3370	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg	0.5 kg	E	36
	Urea nitrate, wetted with not less than 20 percent water, by mass	4.1	UN1357	I	4.1	23, 39, A8, A19, N41	None	211	None	1 kg	15 kg	E	28, 36
	Urea peroxide, see Urea hydrogen peroxide			II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Valeraldehyde		UN2058	II	3	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	243	1 L	30 L	C	40
	Valeric acid, see Corrosive liquids, n.o.s.	8	UN2502	II	8, 3								
	Valeryl chloride												
	Vanadium compound, n.o.s.	6.1	UN3285	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
	Vanadium pentoxide, non-fused form			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
	Vanadium tetrachloride			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Vanadium oxytrichloride	8	UN2443	II	8	A3, A6, A7, B2, B16, IB2, N34, T7, TP2	154	202	242	Forbidden	30 L	C	40
	Vanadium pentoxide, non-fused form	6.1	UN2862	III	6.1	IB8, IP3, T1, TP33	153	213	240	200 kg	200 kg	A	40
	Vanadium tetrachloride	8	UN2444	I	8	A3, A6, A7, B4, N34, T10, TP2	None	201	243	Forbidden	2.5 L	C	40
	Vanadium trichloride	8	UN2475	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	40
	Vanadyl sulfate	6.1	UN2931	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Vehicle, flammable gas powered	9	UN3166	9	9	135, 157	220	220	220	Forbidden	No limit	A	
	Vehicle, flammable liquid powered	9	UN3166	9	9	135, 157	220	220	220	No limit	No limit	A	
	Very signal cartridge, see Cartridges, signal												
	Vinyl acetate, stabilized	3	UN1301	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Vinyl bromide, stabilized	2.1	UN1085		2.1	T50	306	304	314, 315.	Forbidden	150 kg	B	40
	Vinyl butyrate, stabilized	3	UN2838	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Vinyl chloride, stabilized	2.1	UN1086		2.1	21, B44, T50	306	304	314	Forbidden	150 kg	B	
	Vinyl chloroacetate	6.1	UN2589	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Vinyl ethyl ether, stabilized	3	UN1302	I	3	A3, T11, TP2	None	201	243	1 L	30 L	D	
	Vinyl fluoride, stabilized	2.1	UN1860		2.1		306	304	314	Forbidden	150 kg	E	40
	Vinyl isobutyl ether, stabilized	3	UN1304	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Vinyl methyl ether, stabilized	2.1	UN1087		2.1	B44, T50	306	304	314	Forbidden	150 kg	B	40
	Vinyl nitrate polymer	Forbidden											
	Vinylidene chloride, stabilized	3	UN1303	I	3	T12, TP2, TP7	150	201	243	1 L	30 L	E	40

	Vinylpyridines, stabilized	UN3073	II 6.1, 3, 8.	IB1, T7, TP2, TP13	153	202	243	1 L	30 L B	40
	Vinytoluenes, stabilized	3 UN2618	III 3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	.....
	Vinylchlorosilane, stabilized	3 UN1305	I 3, 8	A3, A7, B6, N34, T11, TP2, TP13	None	201	243	Forbidden	2.5 L B	40
	Warheads, rocket with buster or expelling charge	1.4D UN0370	II 1.4D	..	None	62	None	Forbidden	75 kg 02	.....
	Warheads, rocket with buster or expelling charge	1.4F UN0371	II 1.4F	..	None	62	None	Forbidden	Forbidden 08	.....
	Warheads, rocket with bursting charge	1.1D UN0286	II 1.1D	..	None	62	None	Forbidden	Forbidden 03	.....
	Warheads, rocket with bursting charge	1.2D UN0287	II 1.2D	..	None	62	None	Forbidden	Forbidden 03	.....
	Warheads, rocket with bursting charge	1.1F UN0369	II 1.1F	..	None	62	None	Forbidden	Forbidden 08	.....
	Warheads, torpedo with bursting charge	1.1D UN0221	II 1.1D	..	None	62	None	Forbidden	Forbidden 03	.....
G	Water-reactive liquid, corrosive, n.o.s.	4.3 UN3129	I 4.3, 8	..	None	201	243	Forbidden	1 L D	.....
		.....	II 4.3, 8	IB1	None	202	243	1 L	5 L E	85
		.....	III 4.3, 8	IB2	None	203	242	5 L	60 L E	40
G	Water-reactive liquid, n.o.s.	4.3 UN3148	I 4.3	..	None	201	244	Forbidden	1 L E	40
		.....	II 4.3	IB1	None	202	243	1 L	5 L E	40
		.....	III 4.3	IB2	None	203	242	5 L	60 L E	40
G	Water-reactive liquid, toxic, n.o.s.	4.3 UN3130	I 4.3,	A4	None	201	243	Forbidden	1 L D	.....
		.....	6.1,	..	None	202	243	1 L	5 L E	85
		.....	II 4.3,	IB1	None	202	243	5 L	60 L E	85
		.....	III 4.3,	IB2	None	203	242	Forbidden	15 kg D	.....
G	Water-reactive solid, corrosive, n.o.s.	4.3 UN3131	I 4.3, 8	IB4, IP1, N40	None	211	242	Forbidden	15 kg D	85
		.....	II 4.3, 8	IB6, IP2, T3,	151	212	242	15 kg	50 kg E	.....
		.....	III 4.3,	TP33	151	213	241	25 kg	100 kg E	85
		.....	III 4.3, 8	IB8, IP4, T1,	None	211	242	Forbidden	15 kg D	.....
G	Water-reactive solid, flammable, n.o.s.	4.3 UN3132	I 4.3,	IB4, N40	None	211	242	15 kg	50 kg E	.....
		.....	II 4.3,	IB4, T3, TP33	151	212	242	25 kg	100 kg E	.....
		.....	III 4.3,	IB6, T1, TP33	151	213	241	25 kg	100 kg E	40
G	Water-reactive solid, n.o.s.	4.3 UN2813	I 4.3	IB4, N40	None	211	242	Forbidden	15 kg E	40
		.....	II 4.3	IB7, IP2, T3,	151	212	242	15 kg	50 kg E	40
		.....	III 4.3	TP33	151	213	241	25 kg	100 kg E	40
G	Water-reactive, solid, oxidizing, n.o.s.	4.3 UN3133	II 4.3,	IB8, IP4, T1,	None	214	214	Forbidden	Forbidden E	40
		.....	5.1,	TP33	None	214	214	Forbidden	Forbidden E	40
		.....	III 4.3,	..	None	214	214	Forbidden	Forbidden E	40
G	Water-reactive solid, self-heating, n.o.s.	4.3 UN3135	I 4.3,	N40	None	211	242	Forbidden	15 kg E	.....
		.....	4.2,	..	None	212	242	15 kg	50 kg E	.....
		.....	II 4.3,	IB5, IP2, T3,	None	212	242	25 kg	100 kg E	.....
		.....	4.2,	TP33	None	213	241	25 kg	100 kg E	.....
G	Water-reactive solid, toxic, n.o.s.	4.3 UN3134	I 4.3,	IB8, IP4, T1,	None	211	242	Forbidden	15 kg D	.....
		.....	6.1,	TP33	151	212	242	15 kg	50 kg E	85
		.....	II 4.3,	IB8, IP4, T1,	151	213	241	25 kg	100 kg E	85
		.....	6.1,	TP33	.....	.....	.....	.....	.....	.....
I	Wheel chair, electric. see Battery powered vehicle or Battery powered equipment	.....	.....	.....	.....	.....	.....	.....	.....	.....
	White acid, see Hydrofluoric acid	.....	.....	.....	.....	.....	.....	.....	.....	.....
	White asbestos (chrysotile, actinolite, anthophyllite, tremolite)	9 UN2590	III 9	156, IB8, IP2, IP3, T1, TP33	155	216	240	200 kg	200 kg A	34, 40
A I W	Wood preservatives, liquid	3 UN1306	II 3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L B	.....
	Wool waste, wet	4.2 UN1387	III 3	B1, IB3, T2, TP1	150	203	242	60 L	220 L A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)				Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk		Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)		(9A)	(9B)	(10A)	(10B)
	Xylidines, solid	6.1	UN3452	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	A	
	Xylyl bromide, liquid	6.1	UN1701	II	6.1	A3, A6, A7, IB2, N33, T7, TP2, TP13	None	340	None		Forbidden	60 L	D	40
	Xylyl bromide, solid	6.1	UN3417	II	6.1	A3, A6, A7, IB8, IP2, IP4, N33, T3, TP33	None	340	None		25 kg	100 kg	B	40
	<i>p</i> -Xylyl diazide	Forbidden												
	Zinc ammonium nitrite	5.1	UN1512	II	5.1	IB8, IP4, T3, TP33	None	212	242		5 kg	25 kg	E	
	Zinc arsenate or Zinc arsenite or Zinc arsenite mixtures	6.1	UN1712	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242		25 kg	100 kg	A	
	Zinc ashes	4.3	UN1435	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241		25 kg	100 kg	A	
	<i>Zinc bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.</i>													
	Zinc bromate	5.1	UN2469	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240		25 kg	100 kg	A	56, 58
	Zinc chlorate	5.1	UN1513	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242		5 kg	25 kg	A	56, 58
	Zinc chloride, anhydrous	8	UN2331	III	8	IB8, IP3, T1, TP33	None	213	240		25 kg	100 kg	A	
	Zinc chloride, solution	8	UN1840	III	8	IB3, T4, TP1	154	203	241		5 L	60 L	A	
	Zinc cyanide	6.1	UN1713	I	6.1	IB7, IP1, T6, TP33	None	211	242		5 kg	50 kg	A	52
	Zinc dithionite or Zinc hydrosulfite	9	UN1931	III	None	IB8, IP3, T1, TP33	155	204	240		100 kg	200 kg	A	49
	<i>Zinc ethyl, see Diethylzinc</i>													
	Zinc fluorosilicate	6.1	UN2855	III	6.1	IB8, IP3, T1, TP33	153	213	240		100 kg	200 kg	A	52
	Zinc hydrosulfite, see Zinc dithionite													
	<i>Zinc murexide solution, see Zinc chloride, solution</i>													
	Zinc nitrate	5.1	UN1514	II	5.1	IB8, IP4, T3, TP33	152	212	240		5 kg	25 kg	A	
	Zinc permanganate	5.1	UN1515	II	5.1	IB6, IP2, T3, TP33	152	212	242		5 kg	25 kg	D	56, 58, 138
	Zinc peroxide	5.1	UN1516	II	5.1	IB6, IP2, T3, TP33	152	212	242		5 kg	25 kg	A	13, 52, 66, 75
	Zinc phosphide	4.3	UN1714	I	4.3, 6.1	A19, N40	None	211	None		Forbidden	15 kg	E	40, 52, 85
	Zinc powder or Zinc dust	4.3	UN1436	I	4.3, 4.2	A19, IB4, IP1, N40	None	211	242		Forbidden	15 kg	A	52, 53
				II	4.3, 4.2	A19, IB7, IP2, T3, TP33	None	212	242		15 kg	50 kg	A	52, 53
				III	4.3, 4.2	IB8, IP4, T1, TP33	None	213	242		25 kg	100 kg	A	52, 53
	Zinc resinate	4.1	UN2714	III	4.1	A1, IB6, T1, TP33	151	213	240		25 kg	100 kg	A	
	<i>Zinc selenate, see Selenates or Selenites</i>													
	<i>Zinc selenite, see Selenates or Selenites</i>													
	<i>Zinc silicofluoride, see Zinc fluorosilicate</i>													
	Zirconium, dry, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	UN2858	III	4.1	A1	151	213	240		25 kg	100 kg	A	
	Zirconium, dry, finished sheets, strip or coiled wire	4.2	UN2009	III	4.2	A1, A19	None	213	240		25 kg	100 kg	D	
	Zirconium hydride	4.1	UN1437	III	4.1	A19, A20, IB4, N34, T3, TP33	None	212	240		15 kg	50 kg	E	
	Zirconium nitrate	5.1	UN2728	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240		25 kg	100 kg	A	
	Zirconium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	UN0236	II	1.3C	23, N41	None	62	None		Forbidden	Forbidden	10	5E
	Zirconium picramate, wetted with not less than 20 percent water, by mass	4.1	UN1517	I	4.1	T21, TP7, TP33	None	211	None		1 kg	15 kg	D	28, 36
	Zirconium powder, dry	4.2	UN2008	I	4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	211	242		Forbidden	Forbidden	D	
				II	4.2		None	212	241		15 kg	50 kg	D	

			III	II	I	None	213	241	25 kg	D
Zirconium powder, wetted with not less than 25 percent water (<i>a visible excess of water must be present</i>) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.	UN1358 4.1	..... .....	II	4.1	..... .....	A19, A20, IB6, IP2, N34, T3, TP33	None	212	15 kg	E
Zirconium scrap	UN1932 4.2	..... .....	III	4.2	..... .....	IB8, IP3, N34, T1, TP33	None	213	Forbidden	D
Zirconium suspended in a liquid	UN1308 3	..... .....	I	3	..... .....	IB2	None	201	Forbidden	B
		..... .....	II	3	..... .....	B1, B2	None	202	5 L	B
			III	3		IB8, IP3, T1, TP33	150	203	60 L	B
Zirconium tetrachloride	UN2503 8		III	8			154	213	25 kg	A

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* * * * *

■ 10. In Appendix B to § 172.101, the List of Marine Pollutants is amended by removing three entries, revising one entry and adding one entry in appropriate alphabetical order to read as follows:

Appendix B to § 172.101—List of Marine Pollutants.

* * * * *

LIST OF MARINE POLLUTANTS

S, M, P (1)	Marine Pollutant (2)
[Remove:] ..	Diphenyl oxide and biphenyl phenyl ether mixtures Isoamyl mercaptan Pentanethiols Tetrachlorophenol
[Revise:] PP	2, 6-Di-tert-Butylphenol
[Add:]	
* * *	Chloropicrin
* * *	

■ 11. In § 172.102:

■ a. Paragraphs (b)(3), (b)(4), (b)(7) and (b)(8) are revised and a new paragraph (b)(9) is added.

■ b. In paragraph (c)(1), Special Provisions 47, 135, and 137 are revised; Special Provisions 163, 164, 165, 166, 167, 170 and 171 are added; and Special Provision 143 and 153 are removed.

■ c. In paragraph (c)(2), a new Special Provision A14 is added.

■ d. The introductory text of paragraph (c)(3) is revised; in paragraph (c)(3) Special Provision B69 is revised and paragraph (c)(4) is revised.

■ e. Paragraphs (c)(7)(viii) and (c)(8) are redesignated as paragraphs (c)(8) and (c)(9) respectively, the introductory paragraph of (c)(8) is revised, a new paragraph (c)(8)(ii) is added, Special Provisions TP3 and TP6 are revised and a new Special Provision TP32 and TP33 are added.

■ f. Paragraph (c)(7) is revised.

The additions and revisions read as follows:

§ 172.102 Special provisions.

* * * * *

(b) * * *

(3) A code containing the letter “B” refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN, IM Specification portable tanks or IBCs.

(4) A code containing the letters “IB” or “IP” refers to a special provision that applies only to transportation in IBCs.

* * * * *

(7) A code containing the letter “T” refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

(8) A code containing the letters “TP” refers to a portable tank special provision for UN or IM Specification portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter “W” refers to a special provision that applies only to transportation by water.

(c) * * *

(1) * * *

Code/Special Provisions

* * * * *

47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Small inner packagings consisting of sealed packets containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed into a solid material are not subject to this subchapter provided there is no free liquid in the packet.

* * * * *

135 The entries “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate, must be used when internal combustion engines are installed in a vehicle. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries.

* * * * *

137 Cotton, dry; flax, dry; and sisal, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, “Cotton Bales—Dimensions and Density” (IBR, see § 171.7 of this subchapter) to a density of not less than 360 kg/m³ (22.1 lb/ft³) for cotton, 400 kg/m³ (24.97 lb/ft³) for flax and 620 kg/m³ (38.71 lb/ft³) for sisal and transported in a freight container or closed transport vehicle.

* * * * *

163 Substances must satisfactorily pass Test Series 8 of the UN Manual of

Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).

164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). The material must be packaged so that the percentage of diluent does not fall below that stated in the approval at any time during transportation.

165 These substances are susceptible to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of transportation, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

166 When transported in non-friable tablet form calcium hypochlorite, dry or hydrated, may be transported as a Packing Group III material.

167 These storage systems shall always be considered as containing hydrogen.

170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powdered mixtures that have been shown to meet the PG III criteria in § 173.127.

(2) “A” codes. These provisions apply only to transportation by aircraft:

Code/Special Provisions

* * * * *

A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with § 173.306 of this subchapter when transported aboard an aircraft.

* * * * *

(3) “B” codes. These provisions apply only to bulk packagings. Except as otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

* * * * *

B69 Dry sodium cyanide or potassium cyanide may be shipped in sift-proof weather-resistant metal covered hopper cars, covered motor vehicles, portable tanks or non-specification bins. Bins must approved by the Associate Administrator.

* * * * *

(4) *Table 1 and Table 2—IB Codes and IP Special IBC Packing Provisions.* These provisions apply only to

transportation in IBCs. When no IBC code is assigned in the § 172.101 Table for a specific proper shipping name, or in § 173.225(e) for Type F organic peroxides, an IBC may not be used

unless authorized by the Associate Administrator. The letter “Z” shown in the marking code for composite IBCs must be replaced with a capital code letter designation found in

§ 178.702(a)(2) of this subchapter to specify the material used for the outer packaging. Tables 1 and 2 follow:

TABLE 1.—IB CODES (IBC CODES)

IBC Code	Authorized IBCs
IB1	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
B2	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB3	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 3 for UN2672).
IB4	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2). <i>Additional Requirement:</i> Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Wooden (11C, 11D and 11F). <i>Additional Requirement:</i> Liners of wooden IBCs must be sift-proof.
IB8	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IB9	IBCs are only authorized if approved by the Associate Administrator.

TABLE 2.—IP CODES

IBC Code	Authorized IBCs
IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 °C (131 °F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air shall be eliminated from the vapor space by nitrogen or other means.
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

* * * * *

(7) “T” codes. (i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through T22 specify the applicable minimum test pressure, the minimum

shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.

(ii) The following table specifies the portable tank requirements applicable to “T” Codes T1 through T22. Column 1 specifies the “T” Code. Column 2 specifies the minimum test pressure, in

bar (1 bar = 14.5 psig), at which the periodic hydrostatic testing required by § 180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of § 178.275(g)(3) of this subchapter for the pressure relief devices. When the word “Normal” is indicated, § 178.275(g)(3) of this subchapter does not apply. Column 5 references the applicable requirements for bottom openings in part 178 of this

subchapter or references “Prohibited” which means bottom openings are prohibited. The table follows:

TABLE OF PORTABLE TANK T CODES T1–T22

[Portable tank codes T1–T22 apply to liquid and solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction (1)	Minimum test pressure (bar) (2)	Minimum shell thickness (in mm-reference steel) (See § 178.274(d)) (3)	Pressure-relief requirements (See § 178.275(g)) (4)	Bottom opening requirements (See § 178.275(d)) (5)
T1	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)0
T2	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T3	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T4	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T5	2.65	§ 178.274(d)(2)	§ 178.275(g)(3)	Prohibited
T6	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T7	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T8	4	§ 178.274(d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited
T10	4	6 mm	§ 178.275(g)(3)	Prohibited
T11	6	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T12	6	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275(g)(3)	Prohibited
T15	10	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T16	10	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T17	10	6 mm	Normal	§ 178.275(d)(3)
T18	10	6 mm	§ 178.275(g)(3)	§ 178.275(d)(3)
T19	10	6 mm	§ 178.275(g)(3)	Prohibited
T20	10	8 mm	§ 178.275(g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited
T22	10	10 mm	§ 178.275(g)(3)	Prohibited

(iii) *T50*. When portable tank instruction T50 is referenced in Column (7) of the § 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of § 173.313 of this subchapter.

(iv) *T75*. When portable tank instruction T75 is referenced in Column (7) of the § 172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of § 178.277 of this subchapter.

(v) *UN and IM portable tank codes/special provisions*. When a specific portable tank instruction is specified by a “T” Code in Column (7) of the § 172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in the “T” Code. If a frangible disc is required in series with the reclosing

pressure relief device for the specified portable tank, the alternative portable tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings—

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank “T” Code, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) “*TP*” codes. (i) These provisions apply to the transportation of hazardous materials in IM and UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with

the abbreviation TP (tank provision) and are assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

* * * * *

Code/Special Provisions

* * * * *

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

$$\left(\text{Degree of filling} = 95 \frac{d_r}{d_f} \right).$$

Where: d_f and d_r are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

* * * * *

TP6 The tank must be equipped with a pressure release device which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S–1.2 (see § 171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking

into account the properties of the hazardous material to be transported.

* * * * *

TP32 Portable tanks may be used subject to the following conditions:

a. Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

b. The suitability for transport in tanks must be demonstrated using test 8(d) in Test Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see § 171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

* * * * *

■ 12. In § 172.202, paragraphs (a)(2)(iii) and (a)(5)(i) are revised to read as follows:

§ 172.202 Description of hazardous material on shipping papers.

(a) * * *

(2) * * *

(iii) For domestic shipments, primary and subsidiary hazard class or division names may be entered following the numerical hazard class or division, or following the basic description.

(5) * * *

(i) For Class I materials, the quantity must be the net explosive mass. For an

explosive that is an article, such as Cartridges, small arms, the net explosive mass may be expressed in terms of the net mass of either the article or the explosive materials contained in the article.

* * * * *

■ 13. In § 172.203, paragraphs (f), (m)(2) and (o)(3) are revised and a new paragraph (i)(3) is added to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(f) *Transportation by air.* A statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo aircraft only must be entered on the shipping paper.

* * * * *

(i) * * *

(3) For a hazardous material consigned under an "n.o.s." entry not included in the segregation groups listed in section 3.1.4 of the IMDG Code but belonging, in the opinion of the consignor, to one of these groups, the appropriate segregation group must be shown in association with the basic description (for example, IMDG Code segregation group—1 Acids). When no segregation group is applicable, there is no requirement to indicate that condition.

* * * * *

(m) * * *

(2) For materials that are poisonous by inhalation (see § 171.8 of this subchapter), the words "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" and the words "Zone A", "Zone B", "Zone C", or "Zone D", for gases or "Zone A" or "Zone B" for liquids, as appropriate, must be entered on the shipping description. The word "Poison" or "Toxic" or the phrase "Poison-Inhalation Hazard" or "Toxic Inhalation Hazard" need not be repeated if it otherwise appears in the shipping description.

* * * * *

(o) * * *

(3) The word "SAMPLE" must be included in association with the basic description when a sample of a Division 4.1 (self-reactive) material (see § 173.224(c)(3) of this subchapter) or Division 5.2 (organic peroxide) material (see § 173.225(b)(2) of this subchapter) is offered for transportation.

■ 14. In § 172.204, paragraph (c)(3) is revised to read as follows:

§ 172.204 Shipper's certification.

* * * * *

(c) * * *

(3) *Additional certification requirements.* Effective October 1, 2006, each person who offers a hazardous material for transportation by air must add to the certification required in this section the following statement:

"I declare that all of the applicable air transport requirements have been met."

(i) Each person who offers any package or overpack of hazardous materials for transport by air must ensure that:

(A) The articles or substances are not prohibited for transport by air (see the § 172.101 Table);

(B) The articles or substances are properly classed, marked and labeled and otherwise in a condition for transport as required by this subchapter;

(C) The articles or substances are packaged in accordance with all the applicable air transport requirements, including appropriate types of packaging that conform to the packing requirements and the "A" Special Provisions in § 172.102; inner packaging and maximum quantity per package limits; the compatibility requirements (see, for example, § 173.24 of this subchapter); and requirements for closure for both inner and outer packagings, absorbent materials, and pressure differential in § 173.27 of this subchapter. Other requirements may also apply. For example, single packagings may be prohibited, inner packaging may need to be packed in intermediate packagings, and certain materials may be required to be transported in packagings meeting a more stringent performance level.

(ii) [Reserved]

* * * * *

■ 14a. The introductory text of § 172.315 is revised to read as follows:

§ 172.315 Packages containing limited quantities.

Except for transportation by aircraft or as otherwise provided in this subchapter, a package containing a limited quantity of hazardous materials is not required to be marked with the proper shipping name provided it is marked with the identification (ID) number, preceded by the letters "UN" or "NA," as applicable, for the entry as shown in the § 172.101 Table, and placed within a square-on-point border in accordance with the following:

* * * * *

■ 15. A new § 172.317 is added to read as follows:

§ 172.317 KEEP AWAY FROM HEAT handling mark.

(a) *General.* For transportation by aircraft, each package containing self-

reactive substances of Division 4.1 or organic peroxides of Division 5.2 must be marked with the KEEP AWAY FROM HEAT handling mark specified in this section.

(b) *Location and design.* The marking must be a rectangle measuring at least

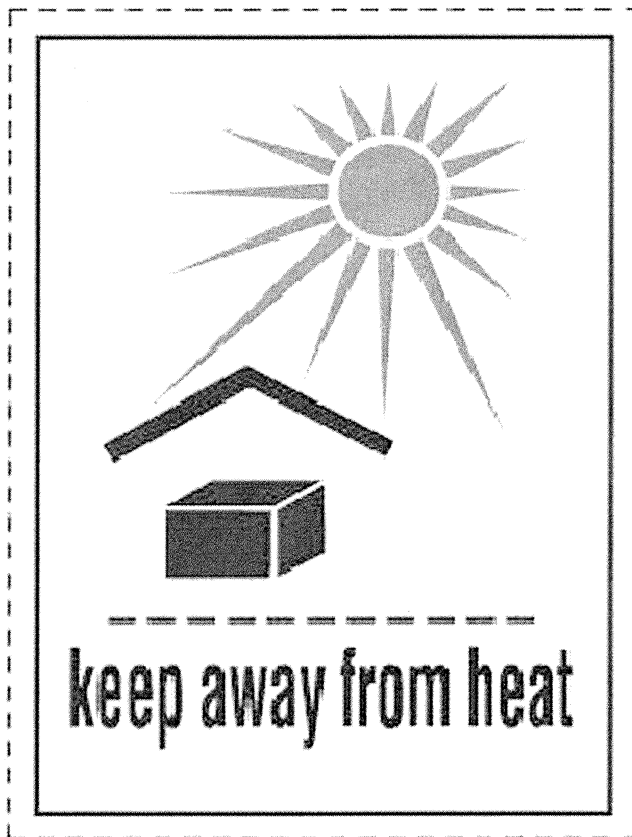
105 mm (4.1 inches) in height by 74 mm (2.9 inches) in width. Markings with not less than half this dimension are permissible where the dimensions of the package can only bear a smaller mark.

(c) *KEEP AWAY FROM HEAT handling mark.* The KEEP AWAY

FROM HEAT handling mark must conform to the following:

(1) Except for size, the KEEP AWAY FROM HEAT handling mark must appear as follows:

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(2) The symbol, letters and border must be black and the background white, except for the starburst which must be red.

(3) The KEEP AWAY FROM HEAT handling marking required by paragraph (a) of this section must be durable, legible and displayed on a background of contrasting color.

§ 172.321 [Removed]

■ 16. Section 172.321 is removed.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

■ 17. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 44701; 49 CFR 1.45, 1.53.

■ 18. In § 173.3, paragraph (c) introductory text is revised to read as follows:

§ 173.3 Packaging and exceptions.

* * * * *

(c) *Salvage drums.* During transportation, as defined in 49 U.S.C. 5102(12), damaged or defective hazardous materials packages, hazardous materials packages that are found not to conform with the requirements of this subchapter, leaking hazardous materials packages, or hazardous materials that have spilled or leaked may be placed for repackaging or disposal in a metal or plastic removable head salvage drum that is compatible with the lading under the following conditions:

* * * * *

■ 19. In § 173.24, paragraphs (g) and (i) are revised to read as follows:

§ 173.24 General requirements for packagings and packages.

* * * * *

(g) *Venting.* Venting of packagings, to reduce internal pressure which may

develop by the evolution of gas from the contents, is permitted only when—

(1) Transportation by aircraft is not involved;

(2) Except as otherwise provided in this subchapter, the evolved gases are not poisonous, likely to create a flammable mixture with air or be an asphyxiant under normal conditions of transportation;

(3) The packaging is designed so as to preclude an unintentional release of hazardous materials from the receptacle;

(4) For bulk packagings, other than IBCs, venting is authorized for the specific hazardous material by a special provision in the § 172.101 table or by the applicable bulk packaging specification in part 178 of this subchapter; and

(5) Intermediate bulk packagings (IBCs) may be vented when required to reduce internal pressure that may develop by the evolution of gas subject to the requirements of paragraphs (g)(1) through (g)(3) of this section. The IBC

must be of a type that has successfully passed (with the vent in place) the applicable design qualification tests with no release of hazardous material.

* * * * *

(i) *Air transportation.* Packages offered or intended for transportation by aircraft are subject to requirements additional to those of other modes of transport (e.g., quantity limitations, requirements for absorbent material, pressure differential requirements, appropriate closure procedures, and specific packaging requirements) and must conform to the general requirements for transportation by aircraft in § 173.27.

■ 20. In § 173.25, paragraphs (a)(2) and (a)(4) are revised to read as follows:

§ 173.25 Authorized packagings and overpacks.

(a) * * *

* * * * *

(2) The overpack is marked with the proper shipping name and identification number, when applicable, and is labeled as required by this subchapter for each hazardous material contained therein, unless marking and labels representative of each hazardous material in the overpack are visible.

* * * * *

(4) The overpack is marked with the word "OVERPACK" when specification packagings are required, unless specification markings on the inside packages are visible. Alternatively, until October 1, 2007, the overpack may be marked with a statement indicating that the "inside (inner) packages comply with prescribed specifications."

* * * * *

■ 21. In § 173.27, paragraph (i) is revised to read as follows:

§ 173.27 General requirements for transportation by aircraft.

* * * * *

(i) Effective October 1, 2006, each person who offers a hazardous material for transportation by aircraft must include the certification statement specified in § 172.204(c)(3).

■ 22. In § 173.28, paragraph (c)(2) introductory text is revised to read as follows:

§ 173.28 Reuse, reconditioning and remanufacture of packagings.

* * * * *

(c) * * *

(2) For the purpose of this subchapter, reconditioning of a non-bulk packaging other than a metal drum includes:

* * * * *

■ 23. In § 173.115, a new paragraph (k) is added to read as follows:

§ 173.115 Class 2, Division 2.1, 2.2 and 2.3—Definitions.

* * * * *

(k) The following applies to aerosols (see § 171.8 of this subchapter):

(1) An aerosol must be assigned to Division 2.1 if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

(2) An aerosol must be assigned to Division 2.2 if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.

(3) Aerosols not meeting the provisions of paragraphs (a) or (b) of this section must be classed in accordance with the appropriate tests of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

(4) Division 2.3 gases may not be transported in an aerosol container.

(5) When the contents are classified as Division 6.1 or Class 8, PG III, the aerosol must be assigned a subsidiary hazard of Division 6.1 or Class 8.

(6) Substances of Division 6.1, PG I or II, and substances of Class 8, PG I are forbidden from transportation in an aerosol container.

(7) Flammable components are Class 3 flammable liquids, Class 4.1 flammable solids, or Division 2.1 flammable gases. The chemical heat of combustion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

■ 24. In § 173.128, paragraph (d)(1) is revised to read as follows:

§ 173.128 Class 5, Division 5.2—Definitions and types.

* * * * *

(d) *Approvals.* (1) An organic peroxide must be approved, in writing, by the Associate Administrator, before being offered for transportation or transported, including assignment of a generic type and shipping description, except for—

(i) An organic peroxide which is identified by technical name in the Organic Peroxides Table in § 173.225(c);

(ii) A mixture of organic peroxides prepared according to § 173.225(b); or

(iii) An organic peroxide which may be shipped as a sample under the provisions of § 173.225(b).

* * * * *

■ 25. In 173.132, paragraph (b)(1) is revised to read as follows:

§ 173.132 Class 6, Division 6.1—Definitions.

* * * * *

(b) * * *

(1) LD₅₀ (median lethal dose) for acute oral toxicity is the statistically derived

single dose of a substance that can be expected to cause death within 14 days in 50% of young adult albino rats when administered by the oral route. The LD₅₀ value is expressed in terms of mass of test substance per mass of test animal (mg/kg).

* * * * *

■ 26. In § 173.136, paragraph (d) is added to read as follows:

§ 173.136 Class 8—Definitions.

* * * * *

(d) Steel or aluminum corrosion test data produced no later than September 30, 2005, using the procedures of § 173.137(c)(2), in effect on September 30, 2004 (see 49 CFR 173.137 revised as of October 1, 2003), for appropriate steel or aluminum types may be used for classification and assignment of packing group for Class 8 materials corrosive to steel or aluminum.

■ 27. In § 173.137, paragraph (c)(2) is revised to read as follows:

§ 173.137 Class 8—Assignment of packing group.

* * * * *

(c) * * *

* * * * *

(2) That do not cause full thickness destruction of intact skin tissue but exhibit a corrosion on steel or aluminum surfaces exceeding 6.25 mm (0.25 inch) a year at a test temperature of 55 °C (130 °F). The corrosion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

■ 28. In § 173.150, paragraph (a), the introductory text of paragraph (b), paragraph (b)(2) and paragraph (c) are revised to read as follows:

§ 173.150 Exceptions for Class 3 (flammable) and combustible liquids.

(a) *General.* Exceptions for hazardous materials shipments in the following paragraphs are permitted only if this section is referenced for the specific hazardous material in the § 172.101 Table of this subchapter.

(b) *Limited quantities.* Limited quantities of flammable liquids (Class 3) and combustible liquids are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging

requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

(2) For flammable liquids in Packing Group II, inner packagings not over 1.0 L (0.3 gallons) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) net capacity each, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities*. Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section and is a "consumer commodity" as defined in 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D material. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

■ 29. In 173.151, paragraphs (b) and (c), and the introductory text of paragraph (d) are revised to read as follows:

§ 173.151 Exceptions for Class 4.

* * * * *

(b) *Limited quantities of Division 4.1*. Limited quantities of flammable solids (Division 4.1) in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For flammable solids in Packing Group II, inner packagings not over 1.0 kg (2.2 pounds) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II,

in which case the inner packagings may not exceed 0.5 kg (1.1 pounds) net capacity each, packed in a strong outer packaging.

(2) For flammable solids in Packing Group III, inner packagings not over 5.0 kg (11 pounds) net capacity each, packed in a strong outer packaging.

(c) *Consumer commodities*. Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and charcoal briquettes in packagings not exceeding 30 kg (66 pounds) gross weight, may be renamed "Consumer commodity" and reclassified as ORM-D material if the material is a "consumer commodity" as defined in 171.8 of this subchapter. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

(d) *Limited quantities of Division 4.3*. Limited quantities of dangerous when wet (Division 4.3) solids in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

■ 30. In § 173.152, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.152 Exceptions for Division 5.1 (oxidizers) and Division 5.2 (organic peroxides).

* * * * *

(b) *Limited quantities*. Limited quantities of oxidizers (Division 5.1) in Packing Group II and III and organic peroxides are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the

specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For oxidizers in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities*. Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

■ 31. In § 173.153, paragraph (b), and paragraph (c)(1) are revised to read as follows:

§ 173.153 Exceptions for Division 6.1 (poisonous materials).

* * * * *

(b) *Limited quantities*. The exceptions in this paragraph do not apply to poison-by-inhalation materials. Limited quantities of poisonous materials (Division 6.1) in Packing Group II and III are excepted from the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight.

The following combination packagings are authorized:

(1) For poisonous materials in Packing Group II, inner packagings not over 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids, packed in a strong outer packaging.

(2) For poisonous materials in Packing Group III, inner packagings not over 4 L (1.0 gallon) each for liquids or 5.0 kg (11 pounds) each for solids, packed in a strong outer packaging.

(c) * * *

(1) A limited quantity of poisonous material in Packing Group III which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D.

* * * * *

■ 32. In § 173.154, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.154 Exceptions for Class 8 (corrosive materials).

* * * * *

(b) *Limited quantities.* Limited quantities of corrosive materials (Class 8) in Packing Group II and III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For corrosive materials in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer

commodity" and reclassified as ORM-D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

■ 33. In § 173.185, paragraphs (c)(3) and (e)(6) are revised to read as follows:

§ 173.185 Lithium batteries and cells.

* * * * *

(c) * * *

(3) Each cell or battery is of the type proven to be non-dangerous by testing in accordance with Tests in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). Such testing must be carried out on each type of cell or battery prior to the initial transport of that type. A cell or battery and equipment containing a cell or battery which was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested;

* * * * *

(e) * * *

(6) Each cell or battery is of the type proven to meet the lithium battery requirements in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). A cell or battery and equipment containing a cell or battery which was first transported prior to January 1, 2006 and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested.

* * * * *

■ 34. In § 173.186, paragraph (e) is revised to read as follows:

§ 173.186 Matches.

* * * * *

(e) Packagings. Strike-anywhere matches must be tightly packed in securely closed chipboard, fiberboard, wooden, or metal inner packagings to prevent accidental ignition under conditions normally incident to transportation. Each inner packaging may contain no more than 700 strike-anywhere matches and must be packed in outer steel drums (1A2), aluminum drums (1B2), steel jerricans (3A2),

wooden (4C1, 4C2), plywood (4D), reconstituted wood (4F) or fiberboard (4G) boxes, plywood (1D) or fiber (1G) drums. Gross weight of fiberboard boxes (4G) must not exceed 30 kg (66 pounds). Gross weight of other outer packagings must not exceed 45 kg (100 pounds).

■ 35. In § 173.187, a new paragraph (f) is added to read as follows:

§ 173.187 Pyrophoric solids, metals or alloys, n.o.s.

* * * * *

(f) In specification cylinders, as prescribed for any compressed gas, except for Specifications 8 and 3HT.

■ 36. In § 173.211, paragraph (c) is revised to read as follows:

§ 173.211 Non-bulk packagings for solid hazardous materials in Packing Group I.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
Aluminum drum: 1B1 or 1B2
Metal drum other than steel or aluminum: 1N1 or 1N2
Plastic drum: 1H1 or 1H2
Fiber drum: 1G
Steel jerrican: 3A1 or 3A2
Plastic jerrican: 3H1 or 3H2
Aluminum jerrican: 3B1 or 3B2
Steel box with liner: 4A
Aluminum box with liner: 4B
Natural wood box, sift proof: 4C2
Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB2, 6PC or 6PG2
Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 37. In § 173.212, paragraph (c) is revised to read as follows:

§ 173.212 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
Aluminum drum: 1B1 or 1B2
Plywood drum: 1D
Plastic drum: 1H1 or 1H2
Fiber drum: 1G
Metal drum other than steel or aluminum: 1N1 or 1N2

Wooden barrel: 2C1 or 2C2
 Steel jerrican: 3A1 or 3A2
 Plastic jerrican: 3H1 or 3H2
 Aluminum jerrican: 3B1 or 3B2
 Steel box: 4A
 Steel box with liner: 4A
 Aluminum box: 4B
 Aluminum box with liner: 4B
 Natural wood box: 4C1
 Natural wood box, sift proof: 4C2
 Plywood box: 4D
 Reconstituted wood box: 4F
 Fiberboard box: 4G
 Expanded plastic box: 4H1
 Solid plastic box: 4H2
 Bag, woven plastic: 5H1, 5H2 or 5H3
 Bag, plastic film: 5H4
 Bag, textile: 5L1, 5L2 or 5L3
 Bag, paper, multiwall, water resistant: 5M2
 Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
 Plastic receptacle in steel, aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
 Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
 Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
 Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
 Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 38. In § 173.213, paragraph (c) is revised to read as follows:

§ 173.213 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) The following single packagings are authorized:

Steel drum: 1A1 or 1A2
 Aluminum drum: 1B1 or 1B2
 Plywood drum: 1D
 Plastic drum: 1H1 or 1H2
 Fiber drum: 1G
 Metal drum other than steel or aluminum: 1N1 or 1N2
 Wooden barrel: 2C1 or 2C2
 Steel jerrican: 3A1 or 3A2
 Plastic jerrican: 3H1 or 3H2
 Aluminum jerrican: 3B1 or 3B2
 Steel box: 4A
 Steel box with liner: 4A
 Aluminum box: 4B
 Aluminum box with liner: 4B
 Natural wood box: 4C1
 Natural wood box, sift proof: 4C2
 Plywood box: 4D
 Reconstituted wood box: 4F
 Fiberboard box: 4G
 Expanded plastic box: 4H1
 Solid plastic box: 4H2
 Bag, woven plastic: 5H1, 5H2 or 5H3

Bag, plastic film: 5H4
 Bag, textile: 5L1, 5L2 or 5L3
 Bag, paper, multiwall, water resistant: 5M2
 Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
 Plastic receptacle in steel, aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
 Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
 Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
 Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
 Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

■ 39. Section 173.219 is revised to read as follows:

§ 173.219 Life-saving appliances.

(a) A life-saving appliance, self-inflating or non-self-inflating, containing small quantities of hazardous materials that are required as part of the life-saving appliance must conform to the requirements of this section. Packagings must conform to the general packaging requirements of subpart B of this part but need not conform to the requirements of part 178 of this subchapter. The appliances must be packed, so that they cannot be accidentally activated and, except for life vests, the hazardous materials must be in inner packagings packed so as to prevent movement. The hazardous materials must be an integral part of the appliance and in quantities that do not exceed those appropriate for the actual appliance when in use.

(b) Life saving appliances may contain:

- (1) Division 2.2 compressed gases, including oxygen. However, oxygen generators are not permitted;
- (2) Signal devices (Class 1), which may include smoke and illumination signal flares;
- (3) Electric storage batteries and lithium batteries (Life saving appliances containing lithium batteries must be transported in accordance with § 173.185.);
- (4) First aid or repair kits conforming to the applicable material and quantity limitations of § 173.161 of this subchapter;
- (5) Strike-anywhere matches;
- (6) For self-inflating life saving appliances only, cartridges power device of Division 1.4S, for purposes of the self-inflating mechanism provided

that the quantity of explosives per appliance does not exceed 3.2 g; or
 (7) Limited quantities of other hazardous materials.

(c) Hazardous materials in life saving appliances must be packaged as follows:

- (1) Division 2.2 compressed gases must be packaged in cylinders in accordance with the requirements of this subchapter;
- (2) Signal devices (Class 1) must be in packagings that prevent them from being inadvertently activated;
- (3) Strike-anywhere matches must be cushioned to prevent movement or friction in a metal or composition receptacle with a screw-type closure in a manner that prevents them from being inadvertently activated;
- (4) Limited quantities of other hazardous materials must be packaged in accordance with the requirements of this subchapter; and
- (5) For other than transportation by aircraft, life saving appliances containing no hazardous materials other than carbon dioxide cylinders with a capacity not exceeding 100 cm³ are not subject to the provisions of this subchapter provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg.

■ 40. In § 173.220, paragraph (b)(2) is revised to read as follows:

§ 173.220 Internal combustion engines, self-propelled vehicles, mechanical equipment containing internal combustion engines, and battery powered vehicles or equipment.

* * * * *

(b) * * *

(2) *Flammable liquefied or compressed gas fuel.* (i) For

transportation by motor vehicle, rail car or vessel, fuel tanks and fuel systems containing flammable liquefied or compressed gas fuel must be securely closed. For transportation by vessel, the requirements of §§ 176.78(k) and 176.905 of this subchapter apply.

(ii) For transportation by aircraft:

(A) Flammable gas-powered vehicles, machines, equipment or cylinders containing the flammable gas must be completely emptied of flammable gas. Lines from vessels to gas regulators, and gas regulators themselves, must also be drained of all traces of flammable gas. To ensure that these conditions are met, gas shut-off valves must be left open and connections of lines to gas regulators must be left disconnected upon delivery of the vehicle to the operator. Shut-off valves must be closed and lines reconnected at gas regulators before loading the vehicle aboard the aircraft; or alternatively

(B) Flammable gas powered vehicles, machines or equipment, which have

cylinders (fuel tanks) that are equipped with electrically operated valves, may be transported under the following conditions:

(1) The valves must be in the closed position and in the case of electrically operated valves, power to those valves must be disconnected;

(2) After closing the valves, the vehicle, equipment or machinery must be operated until it stops from lack of fuel before being loaded aboard the aircraft;

(3) In no part of the system between the pressure receptacle and the shut off valve shall the pressure exceed more than 5% of the maximum allowable working pressure of the system; and

(4) There must not be any residual liquefied gas in the system, including the fuel tank.

■ 41. In § 173.224, paragraph (b)(4) is revised to read as follows:

§ 173.224 Packaging and control and emergency temperatures for self-reactive materials.

* * * * *

(b) * * *

(4) *Packing method.* Column 4 specifies the highest packing method which is authorized for the self-reactive material. A packing method corresponding to a smaller package size may be used, but a packing method corresponding to a larger package size may not be used. The Table of Packing Methods in § 173.225(d) defines the packing methods. Bulk packagings for Type F self-reactive substances are authorized by § 173.225(f) for IBCs and § 173.225(h) for bulk packagings other than IBCs. Additional bulk packagings are authorized if approved by the Associate Administrator.

* * * * *

■ 42. Section 173.225 is revised to read as follows:

§ 173.225 Packaging requirements and other provisions for organic peroxides.

(a) *General.* When the § 172.101 table specifies that an organic peroxide must be packaged under this section, the organic peroxide must be packaged and offered for transportation in accordance with the provisions of this section. Each packaging must conform to the general requirements of subpart B of part 173 and to the applicable requirements of part 178 of this subchapter. Non-bulk packagings must meet Packing Group II performance levels. To avoid unnecessary confinement, metallic non-bulk packagings meeting Packing Group I are not authorized. No used material, other than production residues or regrind from the same production process, may be used in plastic

packagings. Organic peroxides that require temperature control are subject to the provisions of § 173.21(f). When an IBC or bulk packaging is authorized and meets the requirements of paragraph (f) or (h) of this section, respectively, lower control temperatures than those specified for non-bulk packaging may be required. An organic peroxide not identified in paragraph (c), (e), or (g) of this section by technical name, or not assigned to a generic type in accordance with the provisions in paragraph (b)(3) of this section, must conform to the provisions of paragraph (c) of § 173.128.

(b) *New organic peroxides, formulations and samples.* (1) Except as provided for samples in paragraph (b)(2) of this section, no person may offer for transportation an organic peroxide that is not identified by technical name in the Organic Peroxides Table, Organic Peroxide IBC Table, or the Organic Peroxide Portable Tank Table of this section, or a formulation of one or more organic peroxides that are identified by technical name in one of those tables, unless the organic peroxide is assigned a generic type and shipping description and is approved by the Associate Administrator under the provisions of § 173.128(d) of this subchapter.

(2) *Samples.* Samples of new organic peroxides or new formulations of organic peroxides identified in the Organic Peroxides Table in paragraph (c) of this section, for which complete test data are not available, and that are to be transported for further testing or product evaluation, may be assigned an appropriate shipping description for organic peroxide Type C, packaged and offered for transportation, under the following conditions:

(i) Data available to the person offering the material for transportation must indicate that the sample would pose a level of hazard no greater than that of an organic peroxide Type B and that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation;

(ii) The sample must be packaged in accordance with packing method OP2, for a liquid or solid, respectively;

(iii) Packages of the organic peroxide may be offered for transportation and transported in a quantity not to exceed 10 kg (22 pounds) per transport vehicle; and

(iv) One of the following shipping descriptions must be assigned:

(A) Organic peroxide Type C, liquid, 5.2, UN 3103;

(B) Organic peroxide Type C, solid, 5.2, UN 3104;

(C) Organic peroxide Type C, liquid, temperature controlled, 5.2, UN 3113; or

(D) Organic peroxide Type C, solid, temperature controlled, 5.2, UN 3114.

(3) *Mixtures.* Mixtures of organic peroxides individually identified in the Organic Peroxides Table in paragraph (c) of this section may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions for transportation given for this type. If the stable components form a thermally less stable mixture, the SADT of the mixture must be determined and the new control and emergency temperature derived under the provisions of § 173.21(f).

(c) *Organic peroxides table.* The following Organic Peroxides Table specifies by technical name those organic peroxides that are authorized for transportation and not subject to the approval provisions of § 173.128 of this part. An organic peroxide identified by technical name in the following table is authorized for transportation only if it conforms to all applicable provisions of the table. The column headings of the Organic Peroxides Table are as follows:

(1) *Technical name.* The first column specifies the technical name.

(2) *ID number.* The second column specifies the identification (ID) number which is used to identify the proper shipping name in the § 172.101 table. The word "EXEMPT" appearing in the column denotes that the material is not regulated as an organic peroxide.

(3) *Concentration of organic peroxide.* The third column specifies concentration (mass percent) limitations, if any, in mixtures or solutions for the organic peroxide. Limitations are given as minimums, maximums, or a range, as appropriate. A range includes the lower and upper limits (*i.e.*, "53–100" means from, and including, 53% to, and including 100%). See introductory paragraph of § 172.203(k) of this subchapter for additional description requirements for an organic peroxide that may qualify for more than one generic listing, depending on its concentration.

(4) *Concentration of diluents.* The fourth column specifies the type and concentration (mass percent) of diluent or inert solid, when required. Other types and concentrations of diluents may be used if approved by the Associate Administrator.

(i) The required mass percent of "Diluent type A" is specified in column 4a. A diluent type A is an organic liquid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide and with a boiling point not less than 150 °C at

atmospheric pressure. Type A diluents may be used for desensitizing all organic peroxides.

(ii) The required mass percent of "Diluent type B" is specified in column 4b. A diluent type B is an organic liquid which is compatible with the organic peroxide and which has a boiling point, at atmospheric pressure, of less than 150 °C (302 °F) but at least 60 °C (140 °F), and a flash point greater than 5 °C (41 °F). Type B diluents may be used for desensitizing all organic peroxides, when specified in the organic peroxide tables, provided that the boiling point is at least 60 °C (140 °F) above the SADT of the peroxide in a 50 kg (110 lbs)

package. A type A diluent may be used to replace a type B diluent in equal concentration.

(iii) The required mass percent of "Inert solid" is specified in column 4c. An inert solid is a solid that does not detrimentally affect the thermal stability or hazard of the organic peroxide.

(5) *Concentration of water.* Column 5 specifies, in mass percent, the minimum amount of water, if any, which must be in formulation.

(6) *Packing method.* Column 6 specifies the highest packing method (largest packaging capacity) authorized for the organic peroxide. Lower numbered packing methods (smaller

packaging capacities) are also authorized. For example, if OP3 is specified, then OP2 and OP1 are also authorized. The Table of Packing Methods in paragraph (d) of this section defines the non-bulk packing methods.

(7) *Temperatures.* Column 7a specifies the control temperature. Column 7b specifies the emergency temperature. Temperatures are specified only when temperature controls are required. (See § 173.21(f)).

(8) *Notes.* Column 8 specifies other applicable provisions, as set forth in notes following the table.

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ORGANIC PEROXIDE TABLE

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
Acetyl acetone peroxide ...	UN3105	≤42	≥48 ..	.....	.....	≥8	OP7 .....	.....	.....	2 21
Acetyl acetone peroxide [as a paste].	UN3106	≤32 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Acetyl cyclohexanesulfonyl peroxide.	UN3112	≤82 .....	.....	.....	.....	≥12	OP4	− 10	0 .....	.....
Acetyl cyclohexanesulfonyl peroxide.	UN3115	≤32 .....	.....	≥68 ..	.....	.....	OP7	− 10	0	
tert-Amyl hydroperoxide	UN3107	≤88	≥6 ....	.....	.....	≥6	OP8 .....	.....	.....	.....
tert-Amyl peroxyacetate	UN3105	≤62	≥38 ..	.....	.....	.....	OP7 .....	.....	.....	
tert-Amyl peroxybenzoate	UN3103	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Amyl peroxy-2- ethylhexanoate.	UN3115	≤100 .....	.....	.....	.....	.....	OP7	+20	+25 ..	
tert-Amyl peroxy-2- ethylhexyl carbonate.	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Amyl peroxy isopropyl carbonate.	UN3103	≤77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	
tert-Amyl peroxyneodecanoate.	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	0	+10 ..	.....
tert-Amyl peroxy-pivalate ...	UN3113	≤77 .....	.....	≥23 ..	.....	.....	OP5	+10	+15 ..	
tert-Amyl peroxy-3,5,5- trimethylhexanoate.	UN3101	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl cumyl peroxide ..	UN3107	>42–100 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
tert-Butyl cumyl peroxide ..	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	9 9
n-Butyl-4,4-di-(tert- butylperoxy)valerate.	UN3103	>52–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
n-Butyl-4,4-di-(tert- butylperoxy)valerate.	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	.....
tert-Butyl hydroperoxide ...	UN3103	>79–90 .....	.....	.....	.....	≥10	OP5 .....	.....	.....	
tert-Butyl hydroperoxide ...	UN3105	≤80	≥20 ..	.....	.....	.....	OP7 .....	.....	.....	13 4, 13
tert-Butyl hydroperoxide ...	UN3107	≤79 .....	.....	.....	.....	>14	OP8 .....	.....	.....	
tert-Butyl hydroperoxide ...	UN3109	≤72 .....	.....	.....	.....	≥28	OP8 .....	.....	.....	13 13
tert-Butyl hydroperoxide [and] Di-tert- butylperoxide.	UN3103	<82+>9 .....	.....	.....	.....	≥7	OP5 .....	.....	.....	
tert-Butyl monoperoxymaleate.	UN3102	>52–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl monoperoxymaleate.	UN3103	≤52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....	
tert-Butyl monoperoxymaleate.	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	.....
tert-Butyl monoperoxymaleate [as a paste].	UN3108	≤52 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
tert-Butyl peroxyacetate	UN3101	>52–77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl peroxyacetate	UN3103	>32–52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....	
tert-Butyl peroxyacetate	UN3109	≤32 .....	.....	≥68 ..	.....	.....	OP8 .....	.....	.....	.....
tert-Butyl peroxybenzoate	UN3103	>77–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
tert-Butyl peroxybenzoate	UN3105	>52–77	≥23 ..				OP7			1
tert-Butyl peroxybenzoate	UN3106	≤52 .....	.....	.....	≥48 ..	.....	OP7 .....	.....	.....	
tert-Butyl peroxybutyl fumarate.	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	
tert-Butyl peroxycrotonate	UN3105	≤77	≥23 ..				OP7			
tert-Butyl peroxydiethylacetate.	UN3113	≤100 .....	.....	.....	.....	.....	OP5	+20	+25 ..	
tert-Butyl peroxy-2-ethylhexanoate.	UN3113	>52–100 .....	.....	.....	.....	.....	OP6	+20	+25 ..	
tert-Butyl peroxy-2-ethylhexanoate.	UN3117	>32–52		≥48 ..			OP8	+30	+35 ..	
tert-Butyl peroxy-2-ethylhexanoate.	UN3118	≤52 .....	.....	.....	≥48 ..	.....	OP8	+20	+25 ..	
tert-Butyl peroxy-2-ethylhexanoate.	UN3119	≤32 .....	.....	≥68 ..	.....	.....	OP8	+40	+45 ..	
tert-Butyl peroxy-2-ethylhexanoate [and 2,2-di-(tert-Butylperoxy)butane.	UN3106	≤12+≤14	≥14 ..		≥60 ..		OP7			
tert-Butyl peroxy-2-ethylhexanoate [and 2,2-di-(tert-Butylperoxy)butane.	UN3115	≤31+≤36 .....	.....	≥33 ..	.....	.....	OP7	+35	+40 ..	
tert-Butyl peroxy-2-ethylhexylcarbonate.	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
tert-Butyl peroxyisobutyrate.	UN3111	>52–77		≥23 ..			OP5	+15	+20 ..	
tert-Butyl peroxyisobutyrate.	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	+15	+20 ..	
tert-Butylperoxy isopropylcarbonate.	UN3103	≤77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene.	UN3105	≤77	≥23 ..				OP7			
1-(2-tert-Butylperoxy isopropyl)-3-isopropenylbenzene.	UN3108	≤42 .....	.....	.....	≥58 ..	.....	OP8 .....	.....	.....	
tert-Butyl peroxy-2-methylbenzoate.	UN3103	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
tert-Butyl peroxyneodecanoate.	UN3115	>77–100					OP7	–5 ..	+5	
tert-Butyl peroxyneodecanoate.	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	0	+10 ..	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	0	+10 ..	
tert-Butyl peroxyneodecanoate [as a stable dispersion in water (frozen)].	UN3118	≤42					OP8	0	+10 ..	
tert-Butyl peroxyneodecanoate.	UN3119	≤32	≥68 ..	.....	.....	.....	OP8	0	+10 ..	
tert-Butyl peroxyneohexanoate.	UN3115	≤77	≥23 ..	.....	.....	.....	OP7	0	+10 ..	
tert-Butyl peroxyneohexanoate [as a stable dispersion in water].	UN3117	≤42					OP8	0	+10 ..	
tert-Butyl peroxyneohexanoate [as a stable dispersion in water].	UN3113	>67–77	≥23 ..	.....	.....	.....	OP5	0	+10 ..	
tert-Butyl peroxyneohexanoate [as a stable dispersion in water].	UN3115	>27–67 .....	.....	≥33 ..	.....	.....	OP7	0	+10 ..	
tert-Butyl peroxyneohexanoate [as a stable dispersion in water].	UN3119	≤27		≥73 ..			OP8	+30	+35 ..	
tert-Butylperoxy stearylcarbonate.	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3105	>32–100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3109	≤32		≥68 ..			OP8			13 13, 15
3-Chloroperoxybenzoic acid.	UN3102	>57–86 .....	.....	.....	≥14 ..	.....	OP1 .....	.....	.....	
3-Chloroperoxybenzoic acid.	UN3106	≤57 .....	.....	.....	≥3	≥40	OP7 .....	.....	.....	
3-Chloroperoxybenzoic acid.	UN3106	≤77 .....	.....	.....	≥6	≥17	OP7 .....	.....	.....	
Cumyl hydroperoxide	UN3107	>90–98	≤10 ..	.....	.....	.....	OP8 .....	.....	.....	
Cumyl hydroperoxide	UN3109	≤90	≥10 ..				OP8			13 13, 15
Cumyl peroxyneodecanoate.	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	– 10	0	
Cumyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	– 10	0	
Cumyl peroxyneohexanoate.	UN3115	≤77	≥23 ..	.....	.....	.....	OP7	– 10	0	
Cumyl peroxyneopentanoate	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	– 5 ..	+5	
Cyclohexanone peroxide(s).	UN3104	≤91				≥9	OP6			13
Cyclohexanone peroxide(s).	UN3105	≤72	≥28 ..				OP7			5
Cyclohexanone peroxide(s) [as a paste].	UN3106	≤72					OP7			5, 21
Cyclohexanone peroxide(s).	Exempt ..	≤32			≥68 ..		Exempt ..			5 8,13
Diacetone alcohol peroxides.	UN3115	≤57 .....	.....	≥26 ..	.....	≥8	OP7	+40	+45 ..	
Diacetyl peroxide	UN3115	≤27 .....	.....	≥73 ..	.....	.....	OP7	+20	+25 ..	
Di-tert-amyl peroxide	UN3107	≤100 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
1,1-Di-(tert-amylperoxy)cyclohexane.	UN3103	≤82	≥18 ..	.....	.....	.....	OP6 .....	.....	.....	
Dibenzoyl peroxide	UN3102	>51–100			≤48 ..		OP2			3
Dibenzoyl peroxide	UN3102	>77–94				≥6	OP4			3
Dibenzoyl peroxide	UN3104	≤77				≥23	OP6			21
Dibenzoyl peroxide	UN3106	≤62 .....	.....	.....	≥28 ..	≥10	OP7 .....	.....	.....	
Dibenzoyl peroxide [as a paste].	UN3106	>52–62 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Dibenzoyl peroxide	UN3106	>35–52 .....	.....	.....	≥48 ..	.....	OP7 .....	.....	.....	
Dibenzoyl peroxide	UN3107	>36–42	≥18 ..	.....	.....	≤40	OP8 .....	.....	.....	
Dibenzoyl peroxide [as a paste].	UN3108	≤56.5				≥15	OP8			21
Dibenzoyl peroxide [as a paste].	UN3108	≤52 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
Dibenzoyl peroxide [as a stable dispersion in water].	UN3109	≤42 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
Dibenzoyl peroxide	Exempt ..	≤35 .....	.....	.....	≥65 ..	.....	Exempt ..	.....	.....	
Di-(4-tert-butylcyclohexyl)peroxydicarbonate.	UN3114	≤100 .....	.....	.....	.....	.....	OP6	+30	+35 ..	
Di-(4-tert-butylcyclohexyl)peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42					OP8	+30	+35 ..	24
Di-tert-butyl peroxide	UN3107	>52–100 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
Di-tert-butyl peroxide	UN3109	≤52 .....	.....	≥48 ..	.....	.....	OP8 .....	.....	.....	
Di-tert-butyl peroxyazelaate	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	
2,2-Di-(tert-butylperoxy)butane.	UN3103	≤52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....	
1,6-Di-(tert-butylperoxycarbonyloxy)hexane.	UN3103	≤72	≥28 ..				OP5			

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3101	>80–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3103	>52–80	≥20 ..	.....	.....	.....	OP5 .....	.....	.....	
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3105	>42–52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3106	≤42	≥13 ..	.....	≥45 ..	.....	OP7 .....	.....	.....	
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3107	≤27	≥25 ..	.....	.....	.....	OP8 .....	.....	.....	22
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤42	≥58 ..	.....	.....	.....	OP8 .....	.....	.....	
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤25	≥25 ..	≥50 ..	.....	.....	OP8 .....	.....	.....	29
1,1-Di-(tert-butylperoxy)cyclohexane.	UN3109	≤13	≥13 ..	≥74 ..	.....	.....	OP8 .....	.....	.....	
Di-n-butyl peroxydicarbonate.	UN3115	>27–52 .....	.....	≥48 ..	.....	.....	OP7	– 15	– 5 ..	
Di-n-butyl peroxydicarbonate.	UN3117	≤27 .....	.....	≥73 ..	.....	.....	OP8	– 10	0	
Di-n-butyl peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3118	≤42 .....	.....	.....	.....	.....	OP8	– 15	– 5 ..	
Di-sec-butyl peroxydicarbonate.	UN3113	>52–100 .....	.....	.....	.....	.....	OP4	– 20	– 10	6
Di-sec-butyl peroxydicarbonate.	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	– 15	– 5 ..	
Di-(2-tert-butylperoxyisopropyl)benzene(s).	UN3106	>42–100 .....	.....	.....	≤57 ..	.....	OP7 .....	.....	.....	1, 9
Di-(2-tert-butylperoxyisopropyl)benzene(s).	Exempt ..	≤42 .....	.....	.....	≥58 ..	.....	Exempt ..	.....	.....	
Di-(tert-butylperoxy)phthalate.	UN3105	>42–52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	
Di-(tert-butylperoxy)phthalate [as a paste].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	21
Di-(tert-butylperoxy)phthalate.	UN3107	≤42	≥58 ..	.....	.....	.....	OP8 .....	.....	.....	
2,2-Di-(tert-butylperoxy)propane.	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	
2,2-Di-(tert-butylperoxy)propane.	UN3106	≤42	≥13 ..	.....	≥45 ..	.....	OP7 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3101	>90–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	>57–90	≥10 ..	.....	.....	.....	OP5 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	≤77 .....	.....	≥23 ..	.....	.....	OP5 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3110	≤57 .....	.....	.....	≥43 ..	.....	OP8 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤57	≥43 ..	.....	.....	.....	OP8 .....	.....	.....	
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤32	≥26 ..	≥42 ..	.....	.....	OP8 .....	.....	.....	
Dicetyl peroxydicarbonate	UN3116	≤100 .....	.....	.....	.....	.....	OP7	+30	+35 ..	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Dicetyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42					OP8	+30	+35 ..	21
Di-4-chlorobenzoyl peroxide.	UN3102	≤77 .....	.....	.....	.....	≥23	OP5 .....	.....	.....	
Di-4-chlorobenzoyl peroxide [as a paste].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Di-4-chlorobenzoyl peroxide.	Exempt ..	≤32 .....	.....	.....	≥68 ..	.....	Exempt ..	.....	.....	
Dicumyl peroxide	UN3110	>52–100 .....	.....	.....	≤48 ..	.....	OP8 .....	.....	.....	
Dicumyl peroxide	Exempt ..	≤52 .....	.....	.....	≥48 ..	.....	Exempt ..	.....	.....	
Dicyclohexyl peroxydicarbonate.	UN3112	>91–100 .....	.....	.....	.....	.....	OP3	+10	+15 ..	
Dicyclohexyl peroxydicarbonate.	UN3114	≤91 .....	.....	.....	.....	≥9	OP5	+10	+15 ..	
Dicyclohexyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+15	+20 ..	
Didecanoyl peroxide	UN3114	≤100 .....	.....	.....	.....	.....	OP6	+30	+35 ..	
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3106	≤42 .....	.....	.....	≥58 ..	.....	OP7 .....	.....	.....	
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3107	≤22 .....	.....	≥78 ..	.....	.....	OP8 .....	.....	.....	
Di-2,4-dichlorobenzoyl peroxide.	UN3102	≤77 .....	.....	.....	.....	≥23	OP5 .....	.....	.....	
Di-2,4-dichlorobenzoyl peroxide [as a paste with silicone oil].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Di-(2-ethoxyethyl) peroxydicarbonate.	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	– 10	0	
Di-(2-ethylhexyl) peroxydicarbonate.	UN3113	>77–100 .....	.....	.....	.....	.....	OP5	– 20	– 10	
Di-(2-ethylhexyl) peroxydicarbonate.	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	– 15	– 5 ..	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3117	≤62 .....	.....	.....	.....	.....	OP8	– 15	– 5 ..	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	– 15	– 5 ..	
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3120	≤52 .....	.....	.....	.....	.....	OP8	– 15	– 5 ..	
2,2-Dihydroperoxypropane	UN3102	≤27 .....	.....	.....	≥73 ..	.....	OP5 .....	.....	.....	
Di-(1-hydroxycyclohexyl)peroxide.	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Diisobutyl peroxide	UN3111	>32–52		≥48 ..			OP5	– 20	– 10	17
Diisobutyl peroxide	UN3115	≤32 .....	.....	≥68 ..	.....	.....	OP7	– 20	– 10	
Diisopropylbenzene dihydroperoxide.	UN3106	≤82	≥5 .....	.....	.....	≥5	OP7 .....	.....	.....	
Diisopropyl peroxydicarbonate.	UN3112	>52–100 .....	.....	.....	.....	.....	OP2	– 15	– 5 ..	
Diisopropyl peroxydicarbonate.	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	– 20	– 10	
Diisopropyl peroxydicarbonate.	UN3115	≤28	≥72 ..	.....	.....	.....	OP7	– 15	– 5 ..	
Dilauroyl peroxide	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Dilauroyl peroxide [as a stable dispersion in water].	UN3109	≤42 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
Di-(3-methoxybutyl) peroxydicarbonate.	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	− 5 ..	+5	
Di-(2-methylbenzoyl)peroxide.	UN3112	≤87 .....	.....	.....	.....	≥13	OP5	+30	+35 ..	
Di-(4-methylbenzoyl)peroxide [as a paste with silicone oil].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Di-(3-methylbenzoyl) peroxide + Benzoyl (3-methylbenzoyl) peroxide + Dibenzoyl peroxide.	UN3115	≤20+≤18+≤4 .....	.....	≥58 ..	.....	.....	OP7	+35	+40 ..	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3102	>82–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3106	≤82 .....	.....	.....	≥18 ..	.....	OP7 .....	.....	.....	
2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane.	UN3104	≤82 .....	.....	.....	.....	≥18	OP5 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3105	>52–100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3108	≤77 .....	.....	.....	≥23 ..	.....	OP8 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane.	UN3109	≤52	≥48 ..	.....	.....	.....	OP8 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane [as a paste].	UN3108	≤47 .....	.....	.....	.....	.....	OP8 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3101	>86–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3103	>52–86	≥14 ..	.....	.....	.....	OP5 .....	.....	.....	
2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3.	UN3106	≤52 .....	.....	.....	≥48 ..	.....	OP7 .....	.....	.....	
2,5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane.	UN3113	≤100 .....	.....	.....	.....	.....	OP5	+20	+25 ..	
2,5-Dimethyl-2,5-dihydroperoxyhexane.	UN3104	≤82 .....	.....	.....	.....	≥18	OP6 .....	.....	.....	
2,5-Dimethyl-2,5-di-(3,5,5-trimethylhexanoylperoxy)hexane.	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....	
1,1-Dimethyl-3-hydroxybutylperoxyneohexanoate.	UN3117	≤52	≥48 ..	.....	.....	.....	OP8	0	+10 ..	
Dimyristyl peroxydicarbonate.	UN3116	≤100 .....	.....	.....	.....	.....	OP7	+20	+25 ..	
Dimyristyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+20	+25 ..	
Di-(2-neodecanoylperoxyisopropyl)benzene.	UN3115	≤52	≥48 ..	.....	.....	.....	OP7	− 10	0	
Di-n-nonanoyl peroxide	UN3116	≤100 .....	.....	.....	.....	.....	OP7	0	+10 ..	
Di-n-octanoyl peroxide	UN3114	≤100 .....	.....	.....	.....	.....	OP5	+10	+15 ..	
Di-(2-phenoxyethyl)peroxydicarbonate.	UN3102	>85–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
Di-(2-phenoxyethyl)peroxydicarbonate.	UN3106	≤85 .....	.....	.....	.....	≥15	OP7 .....	.....	.....	
Dipropionyl peroxide	UN3117	≤27 .....	.....	≥73 ..	.....	.....	OP8	+15	+20 ..	

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Di-n-propyl peroxydicarbonate.	UN3113	≤100					OP3	−25	−15	18
Di-n-propyl peroxydicarbonate.	UN3113	≤77 .....	.....	≥23 ..	.....	.....	OP5	−20	−10	
Disuccinic acid peroxide ...	UN3102	>72–100 .....	.....	.....	.....	.....	OP4 .....	.....	.....	
Disuccinic acid peroxide ...	UN3116	≤72 .....	.....	.....	.....	≥28	OP7	+10	+15 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide.	UN3115	>38–82	≥18 ..	.....	.....	.....	OP7	0	+10 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	+10	+15 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide.	UN3119	≤38	≥62 ..	.....	.....	.....	OP8	+20	+25 ..	
Ethyl 3,3-di-(tert-amylperoxy)butyrate.	UN3105	≤67	≥33 ..	.....	.....	.....	OP7 .....	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3103	>77–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....	
Ethyl 3,3-di-(tert-butylperoxy)butyrate.	UN3106	≤52			≥48 ..		OP7			13
1-(2-ethylhexanoylperoxy)-1,3-Dimethylbutyl peroxy-pivalate.	UN3115	≤52	≥45 ..	≥10 ..	.....	.....	OP7	−20	−10	
tert-Hexyl peroxyneodecanoate.	UN3115	≤71	≥29 ..	.....	.....	.....	OP7	0	+10 ..	
tert-Hexyl peroxy-pivalate ..	UN3115	≤72 .....	.....	≥28 ..	.....	.....	OP7	+10	+15 ..	
Isopropyl sec-butyl peroxydicarbonate + Di-sec-butyl peroxydicarbonate + Di-isopropyl peroxydicarbonate.	UN3111	≤52+≤28+≤22 .....	.....	.....	.....	.....	OP5	−20	−10	
Isopropyl sec-butyl peroxydicarbonate + Di-sec-butyl peroxydicarbonate + Di-isopropyl peroxydicarbonate.	UN3115	≤32+≤15 – 18+≤12 – 15	≥38 ..	.....	.....	.....	OP7	−20	−10	
Isopropylcumyl hydroperoxide.	UN3109	≤72	≥28 ..	.....	.....	.....	OP8 .....	.....	.....	
p-Menthyl hydroperoxide ..	UN3105	> 72–100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
p-Menthyl hydroperoxide ..	UN3109	≤72	≥28 ..	.....	.....	.....	OP8 .....	.....	.....	
Methylcyclohexanone peroxide(s).	UN3115	≤67 .....	.....	≥33 ..	.....	.....	OP7	+35	+40 ..	
Methyl ethyl ketone peroxide(s).	UN3101	≤52	≥48 ..				OP5			5, 13, 29
Methyl ethyl ketone peroxide(s).	UN3105	≤45	≥55 ..				OP7			5, 29
Methyl ethyl ketone peroxide(s).	UN3107	≤40	≥60 ..				OP8			7
Methyl isobutyl ketone peroxide(s).	UN3105	≤62	≥19 ..				OP7			5, 23
Organic peroxide, liquid, sample.	UN3103						OP2			12
Organic peroxide, liquid, sample, temperature controlled.	UN3113						OP2			12
Organic peroxide, solid, sample.	UN3104						OP2			12
Organic peroxide, solid, sample, temperature controlled.	UN3114						OP2			12

ORGANIC PEROXIDE TABLE—Continued

Technical name	ID number	Concentration (mass %)	Diluent (mass %)			Water (mass %)	Packing method	Temperature (°C)		Notes
			A	B	I			Control	Emergency	
(1)	(2)	(3)	(4a)	(4b)	(4c)	(5)	(6)	(7a)	(7b)	(8)
Peroxyacetic acid, type D, stabilized.	UN3105	≤43 .....	.....	.....	.....	.....	OP7 .....	.....	.....	13, 20
Peroxyacetic acid, type E, stabilized.	UN3107	≤43 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20
Peroxyacetic acid, type F, stabilized.	UN3109	≤43 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20, 28
Peroxyacetic acid or peracetic acid [with not more than 7% hydrogen peroxide].	UN3107	≤36 .....	.....	.....	.....	≥15	OP8 .....	.....	.....	13, 20, 28, 29
Peroxyacetic acid or peracetic acid [with not more than 20% hydrogen peroxide].	Exempt ..	≤6 .....	.....	.....	.....	≥60	Exempt ..	.....	.....	28, 29
Peroxyacetic acid or peracetic acid [with not more than 26% hydrogen peroxide].	UN3109	≤17 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20, 28, 29
Peroxyauric acid	UN3118	≤100 .....	.....	.....	.....	.....	OP8	+35	+40 ..	13
Pinanyl hydroperoxide	UN3105	>56–100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
Pinanyl hydroperoxide	UN3109	≤56	≥44 ..	.....	.....	.....	OP8 .....	.....	.....	
Polyether poly-tert-butylperoxycarbonate.	UN3107	≤52 .....	.....	≥48 ..	.....	.....	OP8 .....	.....	.....	
Tetrahydronaphthyl hydroperoxide.	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	26
1,1,3,3-Tetramethylbutyl hydroperoxide.	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	
1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate.	UN3115	≤100 .....	.....	.....	.....	.....	OP7	+15	+20 ..	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate.	UN3115	≤72 .....	.....	≥28 ..	.....	.....	OP7	-5	+5	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	-5 ..	+5	
1,1,3,3-tetramethylbutyl peroxy-pivalate.	UN3115	≤77	≥23 ..				OP7	0	+10 ..	
3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane.	UN3105	≤42	≥58 ..				OP7			26

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Notes

1. For domestic shipments, OP8 is authorized.

2. Available oxygen must be <4.7%.

3. For concentrations <80% OP5 is allowed. For concentrations of at least 80% but <85%, OP4 is allowed. For concentrations of at least 85%, maximum package size is OP2.

4. The diluent may be replaced by di-tert-butyl peroxide.

5. Available oxygen must be ≤9% with or without water.

6. For domestic shipments, OP5 is authorized.

7. Available oxygen must be ≤8.2% with or without water.

8. Only non-metallic packagings are authorized.

9. For domestic shipments this material may be transported under the provisions of paragraph (h)(3)(xii) of this section.

10. [Reserved]

11. [Reserved]

12. Samples may only be offered for transportation under the provisions of paragraph (c)(2) of this section.

13. "Corrosive" subsidiary risk label is required.

14. [Reserved]

15. No "Corrosive" subsidiary risk label is required for concentrations below 80%.

16. With <6% di-tert-butyl peroxide.

17. With ≥8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.

18. Addition of water to this organic peroxide will decrease its thermal stability.

19. [Reserved]

20. Mixtures with hydrogen peroxide, water and acid(s).

21. With diluent type A, with or without water.

22. With ≥36% diluent type A by mass, and in addition ethylbenzene.

23. With ≥19% diluent type A by mass, and in addition methyl isobutyl ketone.

24. Diluent type B with boiling point >100 C.

25. No "Corrosive" subsidiary risk label is required for concentrations below 56%.

26. Available oxygen must be ≤7.6%.

27. Formulations derived from distillation of peroxyacetic acid originating from peroxyacetic acid in a concentration of not more than 41% with water, total active oxygen less than or equal to 9.5% (peroxyacetic acid plus hydrogen peroxide).

28. For the purposes of this section, the names "Peroxyacetic acid" and "Peracetic acid" are synonymous.

29. For international transportation, shipments of this material must be accompanied by a Competent Authority approval from the Associate Administrator.

(d) *Packing Method Table.* Packagings for organic peroxides and self-reactive substances are listed in the Maximum

Quantity per Packing Method Table. The packing methods are designated OP1 to OP8. The quantities specified for each packing method represent the maximum that is authorized.

(1) The following types of packagings are authorized:

(i) Drums: 1A1, 1A2, 1B1, 1B2, 1D, 1G, 1H1, 1H2;

(ii) Jerricans: 3A1, 3A2, 3B1, 3B2, 3H1, 3H2;

(iii) Boxes: 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 4A, 4B; or

(iv) Composite packagings with a plastic inner receptacle: 6HA1, 6HA2, 6HB1, 6HB2, 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6HH1, 6HH2.

(2) Metal packaging (including inner packagings of combination packagings

and outer packagings of combination or composite packagings) are used only for packing methods OP7 and OP8.

(3) In combination packagings, glass receptacles are used only as inner packagings with a maximum content of 0.5 kg for solids or 0.5 L for liquids.

(4) The maximum quantity per packaging or package for Packing Methods OP1–OP8 must be as follows:

MAXIMUM QUANTITY PER PACKAGING/PACKAGE

[For Packing Methods OP1 to OP8]

Maximum quantity	Packing Method							
	OP1	OP2	OP3	OP4 ¹	OP5	OP6	OP7	OP8
Solids and combination packagings (liquid and solid) (kg)	0.5	0.5/10	5	5	25	50	50	² 400
Liquids (L)	0.5	.....	5	.....	30	60	60	³ 225

¹ If two values are given, the first applies to the maximum net mass per inner packaging and the second to the maximum net mass of the complete package.

² 60 kg for jerricans/200 kg for boxes and, for solids, 400 kg in combination packagings with outer packagings comprising boxes (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and with inner packagings of plastics or fiber with a maximum net mass of 25 kg.

³ 60 L for jerricans.

(e) *Organic Peroxide IBC Table*. The following Organic Peroxide IBC Table specifies, by technical name, those

organic peroxides that are authorized for transportation in certain IBCs and not subject to the approval provisions of

§ 173.128 of this part. Additional requirements for authorized IBCs are found in paragraph (f) of this section.

ORGANIC PEROXIDE IBC TABLE

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
3109	ORGANIC PEROXIDE, TYPE F, LIQUID.				
	tert-Butyl hydroperoxide, not more than 72% with water.	31A	1250		
	tert-Butyl peroxyacetate, not more than 32% in diluent type A.	31A	1250		
	.....	31HA1	1000		
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type A.	31A	1250		
	.....	31HA1	1000		
	Cumyl hydroperoxide, not more than 90% in diluent type A.	31HA1	1250		
	Dibenzoyl peroxide, not more than 42% as a stable dispersion.	31H1	1000		
	Di-tert-butyl peroxide, not more than 52% in diluent type B.	31A	1250		
	.....	31HA1	1000		
	1,1-Di-(tert-butylperoxy) cyclohexane, not more than 42% in diluent type A.	31H1	1000		
	Dicumyl peroxide, less than or equal to 100%	31A	1250		
	.....	31HA1	1000		
	Dilauroyl peroxide, not more than 42%, stable dispersion, in water.	31HA1	1000		
	Isopropyl cumyl hydroperoxide, not more than 72% in diluent type A.	31HA1	1250		
	p-Menthyl hydroperoxide, not more than 72% in diluent type A.	31HA1	1250		
	Peroxyacetic acid, stabilized, not more than 17% ...	31H1	1500		
	.....	31HA1	1500		
	.....	31A	1500		
	Peroxyacetic acid, with not more than 26% hydrogen peroxide.	31A	1500		
	.....	31HA1	1500		
3110	Peroxyacetic acid, type F, stabilized	31A	1500		
	.....	31HA1	1500		
	ORGANIC PEROXIDE TYPE F, SOLID.				
	Dicumyl peroxide, less than or equal to 100%	31A	2000		

ORGANIC PEROXIDE IBC TABLE—Continued

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
3119	 ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED.	31H1 31HA1			
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B.	31HA1	1000	+30 °C	+35 °C
	.....	31A	1250	+30 °C	+35 °C
	tert-Butyl peroxyneodecanoate, not more than 32% in diluent type A.	31A	1250	0 °C	+10 °C
	tert-Butyl peroxyneodecanoate, not more than 42% stable dispersion, in water.	31A	1250	− 5 °C	+5 °C
	tert-Butyl peroxy-pivalate, not more than 27% in diluent type B.	31HA1	1000	+10 °C	+15 °C
	.....	31A	1250	+10 °C	+15 °C
	Cumyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	− 15 °C	− 5 °C
	Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water.	31A	1250	+10 °C	+15 °C
	Di-(4-tert-butylcyclohexyl) peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30 °C	+35 °C
	Dicetyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30 °C	+35 °C
	Di-(2-ethylhexyl) peroxydicarbonate, not more than 52%, stable dispersion, in water.	31A	1250	− 20 °C	− 10 °C
	Dimyristyl peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+15 °C	+20 °C
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A.	31HA1	1000	+10 °C	+15 °C
	.....	31A	1250	+10 °C	+15 °C
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 52%, stable dispersion, in water.	31A	1250	+10 °C	+15 °C
	1,1,3,3-Tetramethylbutyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	− 5 °C	+5 °C

(f) *IBCs*. IBCs are authorized subject to the conditions and limitations of this section if the IBC type is authorized according to paragraph (e) of this section, as applicable, and the IBC conforms to the requirements in subpart O of part 178 of this subchapter at the Packing Group II performance level. Type F organic peroxides or self-reactive substances are not authorized for transportation in IBCs other than those specified, unless approved by the Associate Administrator.

(1) IBCs shall be provided with a device to allow venting during transportation. The inlet to the pressure

relief device shall be sited in the vapor space of the IBC under maximum filling conditions during transportation.

(2) To prevent explosive rupture of metal IBCs or composite IBCs with a complete metal casing, the emergency-relief devices shall be designed to vent all the decomposition products and vapors evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire-engulfment as calculated by the formula in paragraph (h)(3)(v) of this section. The control and emergency temperatures specified in the Organic

Peroxide IBC Table are based on a non-insulated IBC.

(g) Organic Peroxide Portable Tank Table. The following Organic Peroxide Portable Tank Table provides certain portable tank requirements and identifies, by technical name, those organic peroxides that are authorized for transportation in the bulk packagings listed in paragraph (h). Organic peroxides listed in this table, provided they meet the specific packaging requirements found in paragraph (h), are not subject to the approval provisions of § 173.128 of this part.

ORGANIC PEROXIDE PORTABLE TANK TABLE

UN No.	Hazardous material	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel) See. . .	Bottom opening requirements See. . .	Pressure-relief requirements See. . .	Filling limits	Control temperature	Emergency temperature
3109	ORGANIC PEROXIDE, TYPE F, LIQUID.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	tert-Butyl hydroperoxide, not more than 72% with water. *Provided that steps have been taken to achieve the safety equivalence of 65% tert-Butyl hydroperoxide and 35% water.							
	Cumyl hydro-peroxide, not more than 90% in diluent type A.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Di-tert-butyl peroxide, not more than 32% in diluent type A.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Dicumyl peroxide, less than or equal to 100% in diluent type B.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Isopropyl cumyl hydroperoxide, not more than 72% in diluent type A.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
3110	p-Menthyl hydro-peroxide, not more than 72% in diluent type A.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	Pinanyl hydro-peroxide, not more than 56% in diluent type A.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
	ORGANIC PEROXIDE, TYPE F, SOLID.							
	Dicumyl peroxide less than or equal to 100% with inert solids. *Maximum quantity per portable tank 2,000 kg.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)		
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED.							
	tert-Butyl peroxyacetate, not more than 32% in diluent type B.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+30 °C	+35 °C
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent B.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+15 °C	+20 °C
	tert-Butylperoxyvalate, not more than 27% in diluent type B.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+5 °C	+10 °C
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type B.	4	\$ 178.274(d)(2)	\$ 178.275(d)(3)	\$ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+35 °C	+40 °C

Di-(3,5,5-trimethyl-hexanoyl) peroxide, not more than 38% in diluent type A.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	0 °C	+5 °C
Peroxyacetic acid, distilled, stabilized, not more than 41%.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59 °F (15 °C)	+30 °C	+35 °C

(h) *Bulk packagings other than IBCs.* The following bulk packagings are authorized, subject to the conditions and limitations of this section, if the organic peroxide is listed in the Organic Peroxide Portable Tank Table and bulk packagings are authorized, or if the organic peroxide is specifically authorized for transport in a bulk packaging by this paragraph (h), and the bulk packaging conforms to the requirements of this subchapter:

(1) *Rail cars.* Class DOT 103, 104, 105, 109, 111, 112, 114, 115, or 120 fusion-weld tank car tanks are authorized. DOT 103W, 111A60F1 and 111A60W1 tank car tanks must have bottom outlets effectively sealed from inside. Gauging devices are required on DOT 103W tank car tanks. Riveted tank car tanks are not authorized.

(2) *Cargo tanks.* Specification MC 307, MC 310, MC 311, MC 312, DOT 407, and DOT 412 cargo tank motor vehicles with a tank design pressure of at least 172 kPa (25 psig) are authorized.

(3) *Portable tanks.* The following requirements apply to portable tanks intended for the transport of organic peroxides or self-reactive substances. DOT 51, 57, IM 101 portable tanks, and UN portable tanks that conform to the requirements of paragraph (g) of this section, are authorized. Type F organic peroxide or self-reactive substance formulations other than those indicated in the Organic Peroxide Portable Tank Table may be transported in portable tanks if approved by the Associate Administrator. The following conditions also apply:

(i) The portable tank must be designed for a test pressure of at least 0.4 MPa (4 bar).

(ii) The portable tank must be fitted with temperature-sensing devices.

(iii) The portable tank must be fitted with pressure relief devices and emergency-relief devices. Vacuum-relief devices may also be used. Pressure relief devices must operate at pressures determined according to both the properties of the hazardous material and the construction characteristics of the portable tank. Fusible elements are not allowed in the shell.

(iv) The pressure relief devices must consist of reclosing devices fitted to prevent significant build-up within the portable tank of the decomposition products and vapors released at a temperature of 50 °C (122 °F). The capacity and start-to-discharge pressure of the relief devices must be in accordance with the applicable requirements of this subchapter specified for the portable tank. The pressure relief devices must not allow liquid to escape in the event the

portable tank is overturned in a loaded condition.

(v)(A) The emergency-relief devices may be of the reclosing or frangible types, or a combination of the two, designed to vent all the decomposition products and vapors evolved during a period of not less than one hour of complete fire engulfment as calculated by the following formula:

$$q = 70961 F A^{0.82}$$

Where:

q = heat absorption (W)

A = wetted area (m²)

F = insulation factor (—)

(B) Insulation factor (F) in the formula in paragraph (h)(3)(v)(A) of this section equals 1 for non-insulated vessels and for insulated vessels F is calculated using the following formula:

$$F = \frac{U (923 - T_{PO})}{47032}$$

Where:

U = K/L = heat transfer coefficient of the insulation (W·m⁻²·K⁻¹); where K = heat conductivity of insulation layer (W·m⁻¹·K⁻¹), and L = thickness of insulation layer (m).

T_{PO} = temperature of material at relieving conditions (K).

(vi) The start-to-discharge pressure of emergency-relief devices must be higher than that specified for the pressure relief devices in paragraph (h)(3)(iv) of this section. The emergency-relief devices must be sized and designed in such a way that the maximum pressure in the shell never exceeds the test pressure of the portable tank.

Note to Paragraph (h)(3)(vi): An example of a method to determine the size of emergency-relief devices is given in Appendix 5 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). A second example of a test method for venting sizing is given in the American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2) (Informational materials not requiring incorporation by reference, see § 171.7(b)).

(vii) For insulated portable tanks, the capacity and setting of emergency-relief devices must be determined assuming a loss of insulation from 1% of the surface area.

(viii) Vacuum-relief devices and reclosing devices on portable tanks used for flammable hazardous materials must be provided with flame arresters. Any reduction of the relief capacity caused by the flame arrester must be taken into account and the appropriate relief capacity must be provided.

(ix) Service equipment such as devices and external piping must be designed and constructed so that no hazardous material remains in them after filling the portable tank.

(x) Portable tanks may be either insulated or protected by a sun-shield. If the SADT of the hazardous material in the portable tank is 55 °C (131 °F) or less, the portable tank must be completely insulated. The outer surface must be finished in white or bright metal.

(xi) The degree of filling must not exceed 90% at 15 °C (59 °F).

(xii) DOT 57 metal portable tanks are authorized only for tert-butyl cumyl peroxide, di-(2-tert-butylperoxyisopropyl-benzene(s)), dicumyl peroxide and mixtures of two or more of these peroxides. DOT 57 portable tanks must conform to the venting requirements of paragraph (f) of this section. These portable tanks are not subject to any other requirements of paragraph (h) of this section.

(4) For tertiary butyl hydroperoxide (TBHP), each tank car, cargo tank or portable tank must contain 7.6 cm (3.0 inches) low density polyethylene (PE) saddles having a melt index of at least 0.2 grams per 10 minutes (for example see, ASTM D1238, condition E) as part of the lading, with a ratio of PE to TBHP over a range of 0.008 to 0.012 by mass. Alternatively, plastic or metal containers equipped with fusible plugs having a melting point between 69 °C (156 °F) and 71 °C (160 °F) and filled with a sufficient quantity of water to dilute the TBHP to 65% or less by mass may be used. The PE saddles must be visually inspected after each trip and, at a minimum, once every 12 months, and replaced when discoloration, fracture, severe deformation, or other indication of change is noted.

■ 43. Section 173.226 is revised to read as follows:

§ 173.226 Materials poisonous by inhalation, Division 6.1, Packing Group I, Hazard Zone A.

Division 6.1, Packing Group I, Zone A poisonous by inhalation (see § 173.133) must be packed in non-bulk packagings in accordance with the following paragraphs:

(a) In seamless specification cylinders conforming to the requirements of § 173.40.

(b) In 1A1, 1B1, 1H1, 1N1, or 6HA1 drums further packed in a 1A2 or 1H2 drum. Both inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packing Group I performance level. The outer drums may be tested either as a package

intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids at a mass corresponding to the mass of the assembled packaging system. All outer drums, even those tested to contain inner packaging or as single packagings for solids, must withstand a hydrostatic test pressure of 100 kPa (15 psig). The outer drum must have a minimum thickness of 1.35 mm (0.053 inch) for a 1A2 outer drum or 6.3 mm (0.248 inch) for a 1H2 outer drum. In addition, the inner drum must—

(1) Be capable of satisfactorily withstanding the hydrostatic pressure test in § 178.605 of this subchapter at a test pressure of 300 kPa (45 psig);

(2) Satisfactorily withstand the leakproofness test in § 178.604 of this subchapter using an internal air pressure of at least twice the vapor pressure at 55 °C (131 °F) of the material to be packaged;

(3) Have screw-type closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(4) Have a minimum thickness as follows:

(i) For a 1A1 or 1N1 drum, 1.3 mm (0.051 inch);

(ii) For a 1B1 drum, 3.9 mm (0.154 inch);

(iii) For a 1H1 drum, 3.16 mm (0.124 inch); and

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0622 inch) and the outer steel drum shall be 0.96 mm (0.0378 inch).

(5) Be isolated from the outer drum by a shock-mitigating, non-reactive material, which completely surrounds the inner packaging on all sides.

(c) In combination packagings, consisting of an inner packaging system and an outer packaging, as follows:

(1) Outer packagings:

Steel drum: 1A2

Aluminum drum: 1B2

Metal drum, other than steel or aluminum: 1N2

Plywood drum: 1D

Fiber drum: 1G

Plastic drum: 1H2

Steel box: 4A

Aluminum box: 4B

Natural wood box: 4C1 or 4C2

Plywood box: 4D

Reconstituted wood box: 4F

Fiberboard box: 4G

Expanded plastic box: 4H2

Solid plastic box: 4H2

(2) Inner packaging system. The inner packaging system consists of two packagings:

(i) an impact-resistant receptacle of glass, earthenware, plastic or metal securely cushioned with a non-reactive, absorbent material, and

(A) Capacity of each inner receptacle may not exceed 4 L (1 gallon).

(B) An inner receptacle that has a closure must have a closure which is physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation.

(ii) Packed within a leak-tight packaging of metal or plastic.

(iii) This combination packaging in turn is packed within the outer packaging.

(A) The total amount of liquid contained in the outer packaging may not exceed 16 L (4 gallons).

(iv) the inner packaging system must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level when subjected to the following tests:

(A) § 178.603—Drop Test

(B) § 178.604—Leakproofness Test

(C) § 178.605—Hydrostatic Pressure Test

(v) The inner packaging system must meet the above tests without the benefit of the outer packaging.

(vi) The leakproofness and hydrostatic pressure test may be conducted on either the inner receptacle or the outer packaging of the inner packaging system.

(vii) In addition to the requirements in § 173.226(b), the outer package must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level as applicable for the type of package being used.

(d) If approved by the Associate Administrator, 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, palletizes the drums, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

(e) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with § 173.28 using a minimum test pressure as indicated in paragraph (b)(2) of this section.

■ 44. Section 173.227 is revised to read as follows:

§ 173.227 Materials poisonous by inhalation. Division 6.1, Packing Group I, Hazard Zone B.

(a) In packagings as authorized in § 173.226 and seamless and welded specification cylinders conforming to the requirements of § 173.40.

(b) 1A1, 1B1, 1N1 or 1H1 drum or 6HA1 composite further packed in a 1A2 or 1H2 drum. Both the inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packaging Group I performance level. The outer drums may be tested either as a package intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids at a mass corresponding to the mass of the assembled packaging system. The outer drum must have a minimum thickness of 1.35 mm (0.053 inches) for a 1A2 outer drum or 6.30 mm (0.248 inches) for a 1H2 outer drum. Outer 1A2 and 1H2 drums must withstand a hydrostatic test pressure of 100 kPa (15 psig). Capacity of the inner drum may not exceed 220 liters. In addition, the inner drum must conform to all of the following requirements:

(2) Have screw closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(3) Have a minimum thickness as follows:

(i) For a 1A1 drum, 0.69 mm (0.027 inch);

(ii) For a 1B1 drum, 2.79 mm (0.110 inch);

(iii) For a 1H1 drum, 1.14 mm (0.045 inch); or

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0625 inch), the outer steel drum shall be 0.70 mm (0.027 inch).

(4) Be isolated from the outer drum by a shock-mitigating, non-reactive

material which completely surrounds the inner packaging on all sides.

(5) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with § 173.28 using a minimum test pressure as indicated in paragraph (b)(1) of this section.

(c) 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

■ 45. In § 173.249, paragraph (c) is revised to read as follows:

§ 173.249 Bromine.

* * * * *

(c) UN portable tanks conforming to tank code T22 (see § 172.102 of this subchapter) or specification IM 101 portable tanks conforming with paragraphs (d) through (f) of this section. Except when transported as a residue, the total quantity in one tank

may not be less than 88% nor more than 92% of the volume of the tank.

* * * * *

■ 46. In § 173.306, paragraphs (i) and (j) are removed and a new paragraph (i) is added to read as follows:

§ 173.306 Limited quantities of compressed gases.

* * * * *

(i) *Aerosols with a capacity of less than 50 ml.* Aerosols, as defined in § 171.8 of this subchapter, with a capacity not exceeding 50 ml and with a pressure not exceeding 970 kPa (141 psig) at 55 °C (131 °F), containing no hazardous materials other than a Division 2.2 gas, are not subject to the requirements of this subchapter.

* * * * *

§ 173.307 [Amended]

■ 47. In § 173.307, paragraph (a)(5) is removed.

■ 48. Section 173.313 is added to read as follows:

§ 173.313 UN Portable Tank Table for Liquefied Compressed Gases.

The UN Portable Tank Table for Liquefied Compressed Gases is referenced in § 172.102(c)(7)(iii) of this

subchapter for portable tanks that are used to transport liquefied compressed gases. The table applies to each liquefied compressed gas that is identified with Special Provision T50 in Column (7) of the § 172.101 Table. In addition to providing the UN identification number and proper shipping name, the table provides maximum allowable working pressures, bottom opening requirements, pressure relief device requirements, and degree of filling requirements for liquefied compressed gas permitted for transportation in a T50 portable tank. In the minimum test pressure column, “small” means a portable tank with a diameter of 1.5 meters or less when measured at the widest part of the shell, “sunshield” means a portable tank with a shield covering at least the upper third of the shell, “bare” means no sunshield or insulation is provided, and “insulated” means a complete cladding of sufficient thickness of insulating material necessary to provide a minimum conductance of not more than 0.67 w/m²/k. In the pressure relief requirements column, the word “Normal” denotes that a frangible disc as specified in § 178.276(e)(3) of this subchapter is not required.

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1005	Ammonia, anhydrous	29.0 25.7 22.0 19.7	Allowed	§ 178.276(e)(3)	0.53
1009	Bromotrifluoromethane or Refrigerant gas R 13B1	38.0 34.0 30.0 27.5	Allowed	Normal	1.13
1010	Butadienes, stabilized	7.5 7.0 7.0	Allowed	Normal	0.55
1011	Butane	7.0 7.0 7.0 7.0	Allowed	Normal	0.51
1012	Butylene	8.0 7.0 7.0 7.0	Allowed	Normal	0.53
1017	Chlorine	19.0 17.0 15.0 13.5	Not Allowed	§ 178.276(e)(3)	1.25
1018	Chlorodifluoromethane or Refrigerant gas R 22	26.0 24.0 21.0 19.0	Allowed	Normal	1.03
1020	Chloropentafluoroethane or Refrigerant gas R 115	23.0 20.0 18.0 16.0	Allowed	Normal	1.06

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1021	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124.	10.3	Allowed	Normal	1.2
		9.8			
		7.9			
		7.0			
1027	Cyclopropane	18.0	Allowed	Normal	0.53
		16.0			
		14.5			
		13.0			
1028	Dichlorodifluoromethane or Refrigerant gas R 12	16.0	Allowed	Normal	1.15
		15.0			
		13.0			
		11.5			
1029	Dichlorofluoromethane or Refrigerant gas R 21	7.0	Allowed	Normal	1.23
		7.0			
		7.0			
		7.0			
1030	1,1-Difluoroethane or Refrigerant gas R 152a	16.0	Allowed	Normal	0.79
		14.0			
		12.4			
		11.0			
1032	Dimethylamine, anhydrous	7.0	Allowed	Normal	0.59
		7.0			
		7.0			
		7.0			
1033	Dimethyl ether	15.5	Allowed	Normal	0.58
		13.8			
		12.0			
		10.6			
1036	Ethylamine	7.0	Allowed	Normal	0.61
		7.0			
		7.0			
		7.0			
1037	Ethyl chloride	7.0	Allowed	Normal	0.8
		7.0			
		7.0			
		7.0			
1040	Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 °C.	Only authorized in 10 bar insulated portable tanks—	Not Allowed	§ 178.276(e)(3)	0.78
1041	Ethylene oxide and carbon dioxide mixture with more than 9% but not more than 87% ethylene oxide.	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1055	Isobutylene	8.1	Allowed	Normal	0.52
		7.0			
		7.0			
		7.0			
1060	Methyl acetylene and propadiene mixture, stabilized	28.0	Allowed	Normal	0.43
		24.5			
		22.0			
		20.0			
1061	Methylamine, anhydrous	10.8	Allowed	Normal	0.58
		9.6			
		7.8			
		7.0			
1062	Methyl bromide	7.0	Not Allowed	§ 178.276(e)(3)	1.51
		7.0			
		7.0			
		7.0			
1063	Methyl chloride or Refrigerant gas R 40	14.5	Allowed	Normal	0.81
		12.7			
		11.3			
		10.0			
1064	Methyl mercaptan	7.0	Not Allowed	§ 178.276(e)(3)	0.78
		7.0			
		7.0			
		7.0			

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1067	Dinitrogen tetroxide	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.3
1075	Petroleum gas, liquefied	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1077	Propylene	28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1078	Refrigerant gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	See § 173.32(f)
1079	Sulphur dioxide	11.6 10.3 8.5 7.6	Not Allowed	§ 178.276(e)(3)	1.23
1082	Trifluorochloroethylene, stabilized or Refrigerant gas R 1113.	17.0 15.0 13.1 11.6	Not Allowed	§ 178.276(e)(3)	1.13
1083	Trimethylamine, anhydrous	7.0 7.0 7.0 7.0	Allowed	Normal	0.56
1085	Vinyl bromide, stabilized	7.0 7.0 7.0 7.0	Allowed	Normal	1.37
1086	Vinyl chloride, stabilized	10.6 9.3 8.0 7.0	Allowed	Normal	0.81
1087	Vinyl methyl ether, stabilized	7.0 7.0 7.0 7.0	Allowed	Normal	0.67
1581	Chloropicrin and methyl bromide mixture	7.0 7.0 7.0 7.0	Not Allowed	§ 178.276(e)(3)	1.51
1582	Chloropicrin and methyl chloride mixture	19.2 16.9 15.1 13.1	Not Allowed	§ 178.276(e)(3)	0.81
1858	Hexafluoropropylene compressed or Refrigerant gas R 1216.	19.2 16.9 15.1 13.1	Allowed	Normal	1.11
1912	Methyl chloride and methylene chloride mixture	15.2	Allowed	Normal	0.811954
1954	n.o.s..	13.0 11.6 10.1			
NA	Insecticide gases, flammable,	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
1958	1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114.	7.0 7.0 7.0	Allowed	Normal	1.3
1965	Hydrocarbon gas, mixture liquefied, n.o.s.	See MAWP definition in 178.276(a)	Allowed	Normal	See § 173.32(f)

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1969	Isobutane	8.5 7.5 7.0 7.0	Allowed	Normal	0.49
1973	Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49% chlorodifluoromethane or Refrigerant gas R 502.	28.3 25.3 22.8 20.3	Allowed	Normal	1.05
1974	Chlorodifluorobromomethane or Refrigerant gas R 12B1 ...	7.4 7.0 7.0 7.0	Allowed	Normal	1.61
1976	Octafluorocyclobutane or Refrigerant gas RC 318	8.8 7.8 7.0 7.0	Allowed	Normal	1.34
1978	Propane	22.5 20.4 18.0 16.5	Allowed	Normal	0.42
1983	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a ...	7.0 7.0 7.0 7.0	Allowed	Normal	1.18
2035	1,1,1-Trifluoroethane compressed or Refrigerant gas R 143a.	31.0 27.5 24.2 21.8	Allowed	Normal	0.76
2424	Octafluoropropane or Refrigerant gas R 218	23.1 20.8 18.6 16.6	Allowed	Normal	1.07
2517	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b	8.9 7.8 7.0 7.0	Allowed	Normal	0.99
2602	Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74% dichlorodifluoromethane or Refrigerant gas R 500.	20.0 18.0 16.0 14.5	Allowed	Normal	1.01
3057	Trifluoroacetyl chloride	14.6 12.9 11.3 9.9	Not allowed	§ 178.276(e)(3)	1.17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide.	14.0 12.0 11.0 9.0	Allowed	§ 178.276(e)(3)	1.09
3153	Perfluoro (methyl vinyl ether)	14.3 13.4 11.2 10.2	Allowed	Normal	1.14
3159	1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	17.7 15.7 13.8 12.1	Allowed	Normal	1.04
3161	Liquefied gas, flammable, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)
3163	Liquefied gas, n.o.s.	See MAWP definition in § 178.276(a)	Allowed	Normal	§ 173.32(f)

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (bar) small; bare; sunshield; insulated	Openings below liquid level	Pressure relief re- quirements (See § 178.276(e))	Maximum fill- ing density (kg/l)
3220	Pentafluoroethane or Refrigerant gas R 125	34.4 30.8 27.5 24.5	Allowed	Normal	0.95
3252	Difluoromethane or Refrigerant gas R 32	43.0 39.0 34.4 30.5	Allowed	Normal	0.78
3296	Heptafluoropropane or Refrigerant gas R 227	16.0 14.0 12.5 11.0	Allowed	Normal	1.2
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8.8% ethylene oxide.	8.1 7.0 7.0 7.0	Allowed	Normal	1.16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide.	25.9 23.4 20.9 18.6	Allowed	Normal	1.02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide.	16.7 14.7 12.9 11.2	Allowed	Normal	1.03
3318	Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia.	See MAWP defi- nition in § 178.276(a)	Allowed	§ 178.276(e)(3)	§ 173.32(f)
3337	Refrigerant gas R 404A	31.6 28.3 25.3 22.5	Allowed	Normal	0.84
3338	Refrigerant gas R 407A	31.3 28.1 25.1 22.4	Allowed	Normal	0.95
3339	Refrigerant gas R 407B	33.0 29.6 26.5 23.6	Allowed	Normal	0.95
3340	Refrigerant gas R 407C	29.9 26.8 23.9 21.3	Allowed	Normal	0.95

■ 49. In § 173.315, paragraph (a) introductory text is revised to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tanks.

(a) Liquefied compressed gases that are transported in UN portable tanks must be loaded and offered for transportation in accordance with the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313. A liquefied compressed gas offered for transportation in a cargo tank motor vehicle or a portable tank must be prepared in accordance with this section, §§ 173.32 and 173.33 and subpart E or subpart G of part 180 of this

subchapter, as applicable. For cryogenic liquids, see § 173.318. For marking requirements, see §§ 172.326 and 172.328 of this subchapter. Except for UN portable tanks, a liquefied compressed gas must be loaded and offered for transportation in accordance with the following table:

* * * * *

■ 50. In § 173.323, paragraph (b) is revised to read as follows:

§ 173.323 Ethylene oxide.

* * * * *

(b) Ethylene oxide must be packaged in one of the following:

(1) In hermetically sealed glass or metal inner packagings suitably cushioned in an outer package authorized by § 173.201(b). The maximum quantity permitted in any glass inner packaging is 100 g (3.5 ounces), and the maximum quantity permitted in any metal inner packaging is 340 g (12 ounces). After filling, each inner packaging shall be determined to be leak-tight by placing the inner packaging in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapor pressure of ethylene oxide at 55 °C is achieved. The total quantity in any outer packaging

shall not exceed 100 g (3.5 ounces), and the total quantity in any outer packaging containing only metal inner packagings shall not exceed 2.5 kg (5.5 pounds). Each completed package must be capable of passing all Packing Group I performance tests.

(2) In specification cylinders, as authorized for any compressed gas except acetylene. Pressurizing valves and insulation are required for cylinders over 4 L (1 gallon) capacity. Eductor tubes must be provided for cylinders over 19 L (5 gallons) capacity. Cylinders must be seamless or welded steel (not brazed) with a nominal capacity of no more than 115 L (30 gallons) and may not be liquid full below 82 °C (180 °F). Before each refilling, each cylinder must be tested for leakage at no less than 103.4 kPa (15 psig) pressure. In addition, each cylinder must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F). The capacity of the relief device and the effectiveness of the insulation must be such that the charged cylinder will not explode when tested by the method described in CGA Pamphlet C-14 or other equivalent method.

(3) In 1A1 steel drums of no more than 231 L (61 gallons) and meeting Packing Group I performance standards. The drum must be lagged of all welded construction with the inner shell having a minimum thickness of 1.7 mm (0.068 inches) and the outer shell having a minimum thickness of 2.4 mm (0.095 inches). Drums must be capable of withstanding a hydrostatic test pressure of 690 kPa (100 psig). Lagging must be of sufficient thickness so that the drum, when filled with ethylene oxide and equipped with the required pressure relief device, will not rupture when exposed to fire. The drum may not be liquid full below 85 °C (185 °F), and must be marked "THIS END UP" on the top head. Before each refilling, each drum must be tested for leakage at no less than 103 kPa (15 psig) pressure. Each drum must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F), and the capacity of the relief device must be such that the filled drum is capable of passing, without rupture, the test method described in CGA Pamphlet C-14 or other equivalent method.

* * * * *

■ 50a. In Appendix H to Part 173, the fifth sentence of paragraph 3. and paragraph 3.(a) are revised to read as follows:

Appendix H to Part 173—Method of Testing for Sustained Combustibility

3. * * * A suitable apparatus is shown in Figure 32.5.2.1 of the UN Manual of Test and Criteria, and the essential dimensions are given in Figures 32.5.2.1 and 32.5.2.2 of the UN Manual and Tests and Criteria. * * *

(a) *Gauge*, for checking that the height of the center of the gas jet above the top of the test portion well is 2.2 mm (see Figure 32.5.2.1);

* * * * *

PART 175—CARRIAGE BY AIRCRAFT

■ 51. The authority citation for part 175 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 52. In § 175.10, paragraphs (a)(4)(i), (a)(4)(iii), and (a)(18) are revised to read as follows:

§ 175.10 Exceptions.

(a) * * *

(4) * * *

(i) Non-radioactive medicinal and toilet articles (including aerosols) may be carried in checked or carry-on baggage. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(iii) Other aerosols in Division 2.2 with no subsidiary risk may be carried in checked baggage only. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(18) Compressed gas cylinders of Division 2.2 worn by passengers for the operation of mechanical limbs and spare cylinders of a similar size for the same purpose in sufficient quantities to ensure an adequate supply for the duration of the journey.

* * * * *

■ 53. Section 175.85 is revised by adding new paragraph (j) to read as follows:

§ 175.85 Cargo location.

* * * * *

(j) A package bearing a KEEP AWAY FROM HEAT handling marking must be protected from direct sunshine and stored in a cool and ventilated place, away from sources of heat.

PART 176—CARRIAGE BY VESSEL

■ 54. The authority citation for part 176 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 55. In § 176.2:

■ a. The definitions for "Explosive article", "Explosive substance" and "Magazine" are revised.

■ b. The term "Transport unit" is revised to read "Cargo transport unit".

■ c. In the definition "In containers or the like", the term "transport unit" is removed and the term "cargo transport unit" is added in its place.

The revisions and additions read as follows:

* * * * *

Cargo transport unit means a transport vehicle, a freight container or a portable tank. A *closed cargo transport unit* means a cargo transport unit in which the contents are totally enclosed by permanent structures. An *open cargo transport unit* means a cargo transport unit that is not a closed cargo transport unit. Cargo transport units with fabric sides or tops are not closed cargo transport units for the purposes of this part.

* * * * *

Explosive article means an article or device which contains one or more explosive substances. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

Explosive substance means a solid or liquid material, or a mixture of materials, which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to its surroundings. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

In containers or the like means any clean, substantial, weatherproof box structure which can be secured to the vessel's structure, including a portable magazine or a closed cargo transport unit. Whenever this stowage is specified, stowage in deckhouses, mast lockers and oversized weatherproof packages (overpacks) is also acceptable.

* * * * *

Magazine means an enclosure designed to protect certain goods of Class 1 (explosive) materials from damage by other cargo and adverse weather conditions during loading, unloading, and when in transit; and to prevent unauthorized access. A magazine may be a fixed structure or compartment in the vessel, a closed freight container, a closed transport vehicle, or a portable magazine. Magazines may be positioned in any part of the ship conforming with the relevant provisions for Class 1 (explosive) materials contained in

Subpart G of this part provided that magazines which are fixed structures are sited so that their doors, where fitted, are easily accessible.

* * * * *

■ 56. Section 176.27 is revised to read as follows:

§ 176.27 Certificate.

(a) A carrier may not transport a hazardous material by vessel unless a certificate prepared in accordance with § 172.204 of this subchapter has been received.

(b) In the case of an import or export shipment of a hazardous material that will not be transported by rail, highway, or air, the shipper may certify on the bill of lading or other shipping paper that the hazardous material is properly classed, described, marked, packaged, and labeled according to part 172 of this subchapter or in accordance with the requirements of the IMDG Code (IBR, see § 171.7 of this subchapter). See § 171.12 of this subchapter.

(c)(1) A person responsible for packing or loading a freight container or transport vehicle with packages of hazardous materials for transportation by a manned vessel in ocean or coastwise service, must provide the vessel operator, at the time the shipment is offered for transportation by vessel, with a signed container packing certificate stating, at a minimum, that—

(i) The freight container or transport vehicle is serviceable for the materials loaded therein, contains no incompatible goods, and is properly marked, labeled or placarded, as applicable; and

(ii) When the freight container or transport vehicle contains packages, those packages have been inspected prior to loading, are properly marked, labeled or placarded, as applicable; are not damaged; and are properly secured.

(2) The certification may appear on a shipping paper or on a separate document as a statement, such as “It is declared that the packing of the container has been carried out in accordance with the applicable provisions [of 49 CFR], [of the IMDG Code], or [of 49 CFR and the IMDG Code].”

■ 57. In § 176.63, paragraph (e) is revised to read as follows:

§ 176.63 Stowage locations.

* * * * *

(e) *Closed cargo transport unit*, for the purpose of stowage of Class 1 (explosive) materials on board a vessel, means a unit which fully encloses the contents by permanent structures and can be secured to the ship's structure,

and includes a magazine. Cargo transport units with fabric sides or tops are not closed cargo transport units.

Where this stowage is specified, stowage in small compartments such as deck-houses and mast lockers are acceptable alternatives. The floor of any closed cargo transport unit or compartment shall either be constructed of wood, close-boarded or so arranged that goods are stowed on sparrs gratings, wooden pallets or dunnage. Provided that the necessary additional specifications are met, a closed cargo transport unit may be used for type “A” or “C” class 1 stowage or as a magazine.”

* * * * *

■ 58. In § 176.76, paragraphs (h) and (i) are revised to read as follows:

§ 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.

* * * * *

(h) A fumigated cargo transport unit may only be transported on board a vessel subject to the following conditions and limitations:

(1) The fumigated cargo transport unit may be placed on board a vessel only if at least 24 hours have elapsed since the unit was last fumigated;

(2) The fumigated cargo transport unit is accompanied by a document showing the date of fumigation and the type and amount of fumigant used;

(3) Prior to loading, the master is informed of the intended placement of the fumigated cargo transport unit on board the vessel and the information provided on the accompanying document;

(4) Equipment that is capable of detecting the fumigant and instructions for the equipment's use is provided on the vessel;

(5) The fumigated cargo transport unit must be stowed at least 5 m from any opening to accommodation spaces;

(6) Fumigated cargo transport units may only be transported on deck on vessels carrying more than 25 passengers; and

(7) Fumigants may not be added to cargo transport units while on board a vessel.

(i) A cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck must be stowed “away from” possible sources of ignition. In the case of container ships, a distance equivalent to one container space athwartships away from possible sources of ignition applied in any direction will satisfy this requirement.

■ 59. In § 176.83:

■ a. Paragraphs (a)(5), (d), (e), (f)(1), (f)(3), (g)(1), (g)(2), (g)(3), and (l) are revised;

■ b. The headings to paragraphs (g) and (f) and the title to Table 176.83(g) are revised; and

■ c. A new paragraph (m) is added.

The revisions and additions read as follows:

§ 176.83 Segregation.

* * * * *

(a) * * *

(5) Whenever hazardous materials are stowed together, whether or not in a cargo transport unit, the segregation of such hazardous materials from others must always be in accordance with the most restrictive requirements for any of the hazardous materials concerned.

* * * * *

(d) *Segregation in cargo transport units*: Two hazardous materials for which any segregation is required may not be stowed in the same cargo transport unit.

(e) *Segregation of hazardous materials stowed as breakbulk cargo from those packed in cargo transport units*: (1) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in open cargo transport units in accordance with paragraph (c) of this section.

(2) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in closed cargo transport units in accordance with paragraph (c) of this section, except that:

(i) Where “away from” is required, no segregation between packages and the closed cargo transport units is required; and

(ii) Where “separated from” is required, the segregation between the packages and the closed cargo transport units may be the same as for “away from”.

(f) *Segregation of cargo transport units on board container vessels*: (1) Except for hatchless container ships, this paragraph applies to segregation of cargo transport units that are carried on board container vessels, or on other types of vessels, provided these cargo spaces are properly fitted for permanent stowage of containers during transport.

* * * * *

(3) *Segregation Table*. Table § 176.83(f) sets forth the general requirements for segregation between cargo transport units on board container vessels.

* * * * *

(g) *Segregation of cargo transport units on board trailerships and trainships*: (1) The requirements of this paragraph apply to the segregation of

cargo transport units which are carried on board trailerships and trainships or in "roll-on/roll-off" cargo spaces.

(2) For trailerships and trainships which have spaces suitable for breakbulk cargo, containers, or any other method of stowage, the appropriate paragraph of this section applies to the relevant cargo space.

(3) *Segregation Table.* Table § 176.83(g) sets forth the general requirements for segregation between transport units on board trailerships and trainships.

Table 176.83(g).—Segregation of Cargo Transport Units on Board Trailerships and Trainships

* * * * *

(1) *Segregation of containers on board hatchless (open-top) container ships:* (1) This paragraph applies to the segregation of cargo transport units that are transported on board hatchless container ships provided that the cargo spaces are properly fitted to give permanent stowage of the cargo transport units during transport.

(2) For container ships that have both hatchless container spaces and other

spaces suitable for breakbulk cargo, conventional container stowage, or any other method of stowage, the appropriate requirements of this section apply to the relevant cargo space.

(3) *Segregation Table.* Table § 176.83(l)(3) sets forth the general requirements for segregation of cargo transport units on board hatchless container ships.

(4) In Table § 176.83(l)(3), a container space means a distance of not less than 6 m (20 feet) fore and aft or not less than 2.5 m (8 feet) athwartship.

TABLE 176.83(L)(3)—SEGREGATION OF CARGO TRANSPORT UNITS ON BOARD HATCHLESS CONTAINER SHIPS

Segregation requirement	VERTICAL		HORIZONTAL					
	Closed versus closed	Closed versus open	Open versus open	Closed versus closed		Closed versus open		Open versus open
				On deck	Under deck	On deck	Under deck	
"Away from"	One on top of the other permitted.	Open on top of closed permitted. Otherwise as for "Open versus open".	.....	Fore and AFT.	No restriction ..	No restriction ..	No restriction ..	one container space or one bulkhead
1. ....	.....	.....	.....	Athwartships.	No restriction ..	No restriction ..	No restriction ..	One container space.
"Separated from" .....	.....	Not in the same vertical line.	.....	Fore and AFT.	One container space.	One container space.	One container space or one bulkhead.	One bulkhead
2. ....	.....	.....	.....	Athwartships.	One container space.	Two container spaces.	Two container spaces.	One bulkhead
"Separated by a complete compartment or hold from"	Not in the same vertical line.	As for "open versus open".	.....	Fore and AFT.	One container space and not in or above same hold.	One container space and not in or above same hold.	One bulkhead ..	Two bulkheads
3. ....	.....	.....	.....	Athwartships.	Two container spaces and not in or above same hold.	Two container spaces and not in or above same hold.	One bulkhead ..	Two bulkheads
"Separated longitudinally by an intervening complete compartment or hold from"	Prohibited	Fore and AFT.	Minimum horizontal distance of 24 m and not in or above same hold.	One bulkhead and minimum horizontal distance of 24 M*.	Minimum horizontal distance of 24 m and not in or above same hold.	Minimum horizontal distance of 24 m and not in or above same hold.	Two bulkheads.	Two bulkheads
4. ....	.....	Athwartships.	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited.	Prohibited.

*Containers not less than 6 m (20 feet) from intervening bulkhead.

Note: All bulkheads and decks must be resistant to fire and liquid.

(m) *Provisions for segregation groups:*

(1) For the purpose of segregation, materials having certain similar chemical properties have been grouped together in segregation groups. The segregation groups (such as "acids", "chlorates", "permanganates") and the entries allocated to each of these groups include the substances identified in section 3.1.4 of the IMDG Code. When column (10B) of the § 172.101 Table refers to a numbered stowage provision set forth in § 176.84(b) such as "Stow 'away from' acids", that particular stowage/segregation requirement applies to all the materials allocated to the respective segregation group.

(2) Not all hazardous materials falling within a segregation group are listed by name in the regulations. These materials are shipped under "n.o.s." entries. Although these "n.o.s." entries are not listed themselves in the above groups, the shipper must decide whether allocation under a segregation group is appropriate. Mixtures, solutions or preparations containing hazardous materials falling within a segregation group and shipped under an "n.o.s." entry are also considered to fall within that segregation group.

(3) The segregation groups described above do not address materials which fall outside the classification criteria of the hazardous materials regulations although it is recognized that some non-hazardous materials have certain chemical properties similar to hazardous materials listed in the segregation groups. A shipper or the person responsible for packing the materials into a cargo transport unit who does have knowledge of the chemical properties of such non-hazardous materials may identify a relevant segregation group and apply the segregation requirements for that segregation group.

■ 60. In § 176.84, paragraph (a) is revised, in paragraph (b), Table of provisions, eleven new entries are added in appropriate numerical order and in paragraph (c)(2), three notes in the Provisions for the stowage of Class 1 (explosive) materials table are revised to read as follows: *§ 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.*

(a) *General.* When Column 10B of the § 172.101 Table refers to a numbered or alpha-numeric stowage provision for water shipments, the meaning and requirements of that provision are set forth in this section. Terms in quotation marks are defined in § 176.83. Other terms used in the table in this section such as "acids", "chlorates" and

"permanganates" indicate different chemical groups referred to here as segregation groups. Materials falling within a segregation group are considered to have certain similar chemical properties and, although not exhaustive in nature, the materials belonging to each group include those substances identified in section 3.1.4 of the IMDG Code as set forth in § 176.83(m).

(b) * * *

Code	Provisions
	* * * * *
133	Stow "separated from" sulfur.
134	Stow "separated from" UN2716.
135	Stow "Separated from" mercury and mercury compounds.
136	Stow "Separated from" carbon tetrachloride.
137	For arsenic sulphides, Stow "separated from" acids.
138	Stow "Separated from" peroxides.
139	Stow "Separated from" mercury salts.
140	Stow "Separated from" UN3052 and UN3461.
141	Stow "away from" radioactive materials.
142	Packages in cargo transport units must be stowed so as to allow for adequate air circulation throughout the cargo.
143	Prohibited on any vessel carrying explosives (except explosives in Division 1.4, Compatibility group S).
	* * * * *

* * * * *

(c) * * *

(2) * * *

Note	Provision
	* * * * *
19E	"Away from" explosives containing chlorates or perchlorates.
	* * * * *
22E	"Away from" ammonium compounds and explosives containing ammonium compounds or salts.
23E	"Separated from" Division 1.4 and "separated longitudinally by an intervening complete compartment or hold from" Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.
	* * * * *
	* * * * *

■ 61. In § 176.116, paragraph (c) is revised and a new paragraph (f) is added to read as follows:

§ 176.116 General stowage conditions for Class 1 (explosive) materials.

* * * * *

(c) *Security:* All compartments, magazines, and cargo transport units containing Class 1 (explosive) materials must be locked or suitably secured in order to prevent unauthorized access.

* * * * *

(f) *Under deck stowage of Class 1 (explosive) materials allocated stowage categories 09 and 10:*

(1) These Class 1 (explosive) materials must not be stowed in the same compartment or hold with other cargo that is readily combustible (such as items packaged in straw).

(2) The position of stowage of these Class 1 (explosive) materials must be such as to maintain direct access to the hatchway by not overstowing with other cargo except for other Class 1 (explosive) materials.

(3) In all cases, all cargo within the compartment or hold, including Class 1 (explosive) materials stowed in cargo transport units, must be secured so as to eliminate the possibility of significant movement. Where an entire deck is used as a magazine, the stowage must be so arranged that the Class 1 (explosive) materials stowed therein must be removed from the ship before working any cargo in any decks above or below the space in the same hold.

§ 176.122 [Removed and Reserved]

■ 62. Section 176.122 is removed and reserved.

§ 176.124 [Removed and Reserved]

■ 63. Section 176.124 is removed and reserved.

■ 64. Section 176.128 is revised to read as follows:

§ 176.128 Magazine stowage types "A", "C" and Special Stowage.

(a) The stowage arrangements of Class 1 (explosive) substances and certain articles are subject to varying levels of containment, (except for compatibility group S substances), when stowed below deck. The levels are dependent on the hazard presented and the nature of the particular explosives involved. Columns (10A) and (10B) of the Hazardous Materials Table specify the stowage applicable to each substance or article. The different levels of containment are defined below as "A", "C" and "Special".

(b) *Magazine stowage type "A".* Magazine stowage type A is required for those substances that must be kept clear of steelwork.

(c) *Magazine stowage type "C".* Magazine stowage type C is required for

those substances in compatibility group A.

(d) *Special Stowage*. Special Stowage is required for Explosive substances, n.o.s. in compatibility groups G or L, and for articles in compatibility groups G, H, L and K, which are particularly hazardous.

§ 176.132 [Removed and Reserved]

■ 65. Section 176.132 is removed and reserved.

■ 66. Section 176.133 is revised to read as follows:

§ 176.133 Magazine stowage Type C.

The construction requirements for magazine stowage type C are the same as for a closed cargo transport unit in § 176.63(e). In addition, the magazine must be located as near as practicable to the centerline of the vessel and must not be closer to the vessel's side than a distance equal to one-eighth of the vessel's beam or 2.4 m (8 feet), whichever is less.

■ 67. Section 176.136 is revised to read as follows:

§ 176.136 Special stowage.

(a) Special stowage is required for certain articles presenting both explosive and chemical hazards, such as smoke or lachrymatory (compatibility group G or H), toxic (compatibility group K), or substances and articles which present a special risk (compatibility group L). Except as permitted in paragraph (c) of this section, Class 1 (explosive) materials requiring special stowage must be stowed on deck unless such stowage is impracticable and the COTP authorizes special stowage below deck. Where on deck stowage is recommended and an alternative stowage below deck is permitted by the COTP, the stowage

must always be subject to special stowage.

(b) Class 1 (explosive) materials for which special stowage is required must be stowed as far away as practicable from living, accommodation, and working areas, and may not be overstowed. Closed cargo transport units in which such Class 1 (explosive) materials are stowed may not be located closer to the vessel's side than a distance equal to one-eighth of the vessel's beam or 2.4 m (8 feet), whichever is less.

(c) Class 1 (explosive) materials in compatibility groups G and H may be transported in steel magazines or in freight containers. If a freight container is used for this purpose, the floor of the freight container must be leakproof; for example, an all-metal container may be used and a fillet of cement or other material worked across the bottom of the door opening.

(d) Class 1 (explosive) materials stowed in one compartment may not be of more than one compatibility group, except the COTP may allow Class 1 (explosive) materials of compatibility groups G and H in separate steel magazines to be stowed in the same compartment, not less than 3 m (10 feet) apart.

(e) Class 1 (explosive) materials in compatibility groups K and L must be stowed in a steel magazine regardless of the stowage position in the vessel.

■ 68. In § 176.138, paragraph (a) is revised to read as follows:

§ 176.138 Deck stowage.

(a) [Reserved]

* * * * *

■ 69. In § 176.142, paragraph (a) is revised to read as follows:

§ 176.142 Hazardous materials of extreme flammability.

(a) Except as allowed by paragraph (b) of this section, certain hazardous materials of extreme flammability may not be transported in a vessel carrying Class 1 (explosive) materials. This prohibition applies to the following liquid hazardous materials:

Carbon disulfide.	UN1131 ...	Class 3
Diethylzinc	UN1366 ...	Division 4.2
Dimethylzinc ...	UN1370 ...	Division 4.2
Magnesium alkyls.	UN3053 ...	Division 4.2
Methyl phosphonous di-chloride, <i>pyrophoric liquid</i> ..	NA2845 ...	Division 6.1
Nickel carbonyl	UN1259 ...	Division 6.1
Pyrophoric liquid, inorganic, n.o.s..	UN3194 ...	Division 4.2
Pyrophoric liquid, organic, n.o.s..	UN2845 ...	Division 4.2
Organometallic substance, liquid, <i>pyrophoric</i> ..	UN3392 ...	Division 4.2
Organometallic substance, liquid, <i>pyrophoric</i> , <i>water-reactive</i> ..	UN3394 ...	Division 4.2

* * * * *

■ 70. In § 176.144, paragraphs (a), (b), (c) and (e) are revised to read as follows:

§ 176.144 Segregation of Class 1 (explosive) materials.

(a) Except as provided in § 176.145 of this subchapter, stowage of Class 1 (explosive) materials within the same compartment, magazine, or cargo transport unit is subject to provisions contained in table 176.144(a).

TABLE 176.144(A)—AUTHORIZED MIXED STOWAGE FOR EXPLOSIVES

[An "X" indicates that explosives in the two different compatibility groups reflected by the location of the "X" may not be stowed in the same compartment, magazine, or cargo transport unit]

Compatibility groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A .....	.....	X	X	X	X	X	X	X	X	X	X	X	X
B	X	.....	X	X	X	X	X	X	X	X	X	X	.....
C	X	X	.....	6	6	X	1	X	X	X	X	4	.....
D	X	X	6	.....	6	X	1	X	X	X	X	4	.....
E	X	X	6	6	.....	.....	1	X	X	X	X	4	.....
F	X	X	X	X	X	X	X	X	X	X	X	X	.....
G	X	X	1	1	1	X	.....	X	X	X	X	X	.....
H	X	X	X	X	X	X	X	.....	X	X	X	X	.....
J	X	X	X	X	X	X	X	X	.....	X	X	X	.....
K	X	X	X	X	X	X	X	X	X	.....	X	X	.....
L	X	X	X	X	X	X	X	X	X	X	2	X	X
N	X	X	4	4	4	X	X	X	X	X	X	3	5
S	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	5	.....

NOTES: 1. Explosive articles in compatibility group G, other than fireworks and those requiring special stowage, may be stowed with articles of compatibility groups C, D, and E, provided no explosive substances are carried in the same compartment, magazine or cargo transport unit.

2. Explosives in compatibility group L may only be stowed in the same compartment, magazine or cargo transport unit with identical explosives within compatibility group L.

3. Different types of articles of Division 1.6, compatibility group N, may only be transported together when it is proven that there is no additional risk of sympathetic detonation between the articles. Otherwise they must be treated as division 1.1.

4. When articles of compatibility group N are transported with articles or substances of compatibility groups C, D or E, the goods of compatibility group N must be treated as compatibility group D.

5. When articles of compatibility group N are transported together with articles or substances of compatibility group S, the entire load must be treated as compatibility group N.

6. Any combination of articles in compatibility groups C, D and E must be treated as compatibility group E. Any combination of substances in compatibility groups C and D must be treated as the most appropriate compatibility group shown in Table 2 of § 173.52 taking into account the predominant characteristics of the combined load. This overall classification code must be displayed on any label or placard on a unit load or cargo transport unit as prescribed in subpart E (Labeling) and subpart F (Placarding).

(b) Where Class 1 (explosive) materials of different compatibility groups are allowed to be stowed in the same compartment, magazine, or cargo transport unit, the stowage arrangements must conform to the most stringent requirements for the entire load.

(c) Where a mixed load of Class 1 (explosive) materials of different hazard divisions and/or stowage arrangements is carried within a compartment, magazine, or cargo transport unit, the entire load must be treated as belonging to the hazard division having the greatest hazard. (For example, if a load of Division 1.1 (explosive) materials is mixed with Division 1.3 (explosive) materials, the load is treated as a Division 1.1 (explosive) material as defined in § 173.50(b) of this subchapter and the stowage must conform to the most stringent requirements for the entire load).

* * * * *

(e) Segregation on deck: When Class 1 (explosive) materials in different compatibility groups are carried on deck, they must be stored not less than 6 m (20 feet) apart unless they are allowed under Table 176.144(a) to be stowed in the same compartment, magazine, or cargo transport unit.

* * * * *

■ 71. In § 176.146, paragraph (d)(1) is revised to read as follows:

§ 176.146 Segregation from non-hazardous materials.

* * * * *

(d) In order to avoid contamination:

(1) An explosive substance or article which has a secondary POISON hazard label must be stowed "separated from" all foodstuffs, except when such materials are stowed in separate closed cargo transport units, the requirements for "away from" segregation apply.

* * * * *

§ 176.168 [Amended]

■ 72. In § 176.168, the undesignated center heading before § 176.168 is revised to read "CARGO TRANSPORT UNITS AND SHIPBORNE BARGES".

■ 73. In § 176.170, a new paragraph (b) is added to read as follows:

§ 176.170 Transport of Class 1 (explosive) materials in freight containers.

* * * * *

(b) Freight containers loaded with Class 1 (explosive) materials, except for explosives in Division 1.4, must not be stowed in the outermost row of containers.

* * * * *

■ 74. In § 176.174, paragraphs (a) and (b) are revised to read as follows:

§ 176.174 Transport of Class 1 (explosive) materials in shipborne barges.

(a) Fixed magazines may be built within a shipboard barge. Freight containers may be used as magazines within a barge.

(b) Shipborne barges may be used for the carriage of all types of Class 1 (explosive) materials. When carrying Class 1 (explosive) materials requiring special stowage, the following requirements apply:

(1) Class 1 (explosive) materials in compatibility group G or H must be stowed in freight containers.

(2) Class 1 (explosive) materials in compatibility group K or L must be stowed in steel magazines.

* * * * *

§ 176.600 [Amended]

■ 75. In § 176.600, in paragraph (a), in the last sentence, the wording "closed transport units" is removed and the wording "closed cargo transport units" is added in its place.

PART 178—SPECIFICATIONS FOR PACKAGINGS

■ 76. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 77. In § 178.274, paragraph (f)(1)(v) is revised to read as follows:

§ 178.274 Specifications for UN portable tanks.

* * * * *

(f) * * *

(1) * * *

(v) The rated flow capacity of the spring loaded pressure relief devices, frangible disc or fusible elements in

standard cubic meters of air per second (m³/s). For spring loaded pressure relief device the rated flow capacity shall be determined according to ISO 4126–1 (IBR, see § 171.1 of this subchapter); and

* * * * *

■ 78. In § 178.275, paragraph (i)(2) is revised to read as follows:

§ 178.275 Specification for UN Portable Tanks intended for the transportation of liquid and solid hazardous materials.

* * * * *

(i) * * *

(2) The combined delivery capacity of the pressure relief system (taking into account the reduction of the flow when the portable tank is fitted with frangible-discs preceding spring-loaded pressure-relief devices or when the spring-loaded pressure-relief devices are provided with a device to prevent the passage of the flame), in condition of complete fire engulfment of the portable tank must be sufficient to limit the pressure in the shell to 20% above the start to discharge pressure limiting device (pressure relief device). The total required capacity of the relief devices may be determined using the formula in paragraph (i)(2)(i)(A) of this section or the table in paragraph (i)(2)(iii) of this section.

* * * * *

■ 79. In § 178.276, paragraphs (a)(4)(ii)(A), (d), and (e)(3) are revised to read as follows:

§ 178.276 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of non-refrigerated liquefied compressed gases.

(a) * * *

(4) * * *

(ii) * * *

(A) Not less than the pressure specified for each liquefied compressed gas listed in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313; and

* * * * *

(d) *Bottom openings.* Bottom openings are prohibited on portable tanks when the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter indicates that bottom openings are not allowed. In

this case, there may be no openings located below the liquid level of the shell when it is filled to its maximum permissible filling limit.

(e) * * *

(3) A portable tank intended for the transportation of certain liquefied compressed gases identified in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter must have a pressure relief device which conforms to the requirements of this subchapter. Unless a portable tank, in dedicated service, is fitted with a relief device constructed of materials compatible with the hazardous material, the relief device must be comprised of a frangible disc preceded by a reclosing device. The space between the frangible disc and the device must be provided with a pressure gauge or a suitable tell-tale indicator. This arrangement must facilitate the detection of disc rupture, pinholing or leakage which could cause a malfunction of the pressure relief device. The frangible disc must rupture at a nominal pressure 10% above the start-to-discharge pressure of the relief device.

* * * * *

■ 80. In § 178.602, paragraph (b) is revised to read as follows:

§ 178.602 Preparation of packagings and packages for testing.

* * * * *

(b) For the drop and stacking test, inner and single-unit receptacles other than bags must be filled to not less than 95% of maximum capacity (see § 171.8 of this subchapter) in the case of solids and not less than 98% of maximum in the case of liquids. Bags shall be filled to the maximum mass at which they may be used. The material to be transported in the packagings may be replaced by a non-hazardous material, except for chemical compatibility testing or where this would invalidate the results of the tests.

* * * * *

■ 81. In § 178.603, paragraphs (c) and (e)(2) introductory text are revised to read as follows:

§ 178.603 Drop test.

* * * * *

(c) *Special preparation of test samples for the drop test.*

(1) Testing of plastic drums, plastic jerricans, plastic boxes other than expanded polystyrene boxes, composite packagings (plastic material), and combination packagings with plastic inner packagings other than plastic bags intended to contain solids or articles must be carried out when the

temperature of the test sample and its contents has been reduced to -18°C (0°F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at -18°C (0°F) or lower are considered acceptable test liquids. Test samples prepared in this way are not required to be conditioned in accordance with § 178.602(d).

* * * * *

(e) * * *

* * * * *

(2) For liquids in single packagings and for inner packagings of combination packagings, if the test is performed with water:

* * * * *

■ 82. In § 178.810, paragraph (b)(3) is revised to read as follows:

§ 178.810 Drop test.

* * * * *

(b) *Special preparation for the drop test.*

* * * * *

(3) Rigid plastic IBCs and composite IBCs with plastic inner receptacles must be conditioned for testing by reducing the temperature of the packaging and its contents to -18°C (0°F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at -18°C (0°F) or lower are considered acceptable test liquids, and may be considered equivalent to water for test purposes. IBCs conditioned in this way are not required to be conditioned in accordance with § 178.802.

* * * * *

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

■ 83. The authority citation for part 180 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

■ 84. In § 180.350, paragraph (c) is revised to read as follows:

§ 180.350 Applicability and definitions.

* * * * *

(c) Routine maintenance of IBCs is the routine performance on:

(1) Metal, rigid plastic or composite IBCs of operations such as:

(i) Cleaning;
(ii) Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment conforming to the original

manufacturer's specifications provided that the leaktightness of the IBC is verified; or

(iii) Restoration of structural equipment not directly performing a hazardous material containment or discharge pressure retention function so as to conform to the design type (for example, the straightening of legs or lifting attachments), provided the containment function of the IBC is not affected.

(2) Plastics or textile flexible IBCs of operations, such as:

(i) Cleaning; or

(ii) Replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification; provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

■ 85. In § 180.352, paragraph (d)(1)(iv) is revised and a new paragraph (d)(1)(v) is added to read as follows:

§ 180.352 Requirements for retest and inspection of IBCs.

* * * * *

(d) * * *

(1) * * *

(iv) Retests and inspections performed in accordance with paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the requirements for the 2.5 and five year periodic tests and inspections required by paragraph (b) of this section, as applicable.

(A) The County in which the routine maintenance was carried out; and

(B) The name or authorized symbol of the party performing the routine maintenance.

(v) Retests and inspections performed in accordance with paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the requirements for the 2.5 and five year periodic tests and inspections required by paragraph (b) of this section, as applicable.

(e) *Requirements applicable to routine maintenance of IBCs.* Except for routine maintenance of metal, rigid plastics and composite IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing the routine maintenance shall durably mark the IBC near the manufacturer's UN design type marking to show the following:

(1) The County in which the routine maintenance was carried out; and

(2) The name or authorized symbol of the party performing the routine maintenance.

(f) *Retest date.* The date of the most recent periodic retest must be marked as

provided in § 178.703(b) of this subchapter.

(g) *Record retention.* The owner or lessee of the IBC must keep records of periodic retests, initial and periodic inspections, and tests performed on the IBC if it has been repaired. Records must include design types and packaging specifications, test and inspection dates, name and address of test and inspection facilities, names or

name of any persons conducting tests or inspections, and test or inspection specifics and results. Records must be kept for each packaging at each location where periodic tests are conducted, until such tests are successfully performed again or for at least 2.5 years from the date of the last test. These records must be made available for

inspection by a representative of the Department on request.

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Elaine E. Joost,

Acting Deputy Administrator, Research and Special Programs Administration.

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