

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

Steel box: 4A1

Steel box with liner: 4A2

Aluminum box: 4B1

Aluminum box with liner: 4B2

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, 6IG1 or 6IH1

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 6PC1

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

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

(a) When § 172.101 of this subchapter specifies that a solid hazardous material be packaged under this section, only non-bulk packagings prescribed in this section may be used for its transportation. Each package must conform to the general packaging requirements of subpart B of part 173, to the requirements of part 178 of this subchapter at the Packing Group I, II or III performance level, and to the requirements of the special provisions of Column 7 of the § 172.101 Table.

(b) The following combination packagings are authorized:

Outer packagings:

Steel drum: 1A1 or 1A2

Aluminum drum: 1B1 or 1B2

Metal drum other than steel or aluminum:

1N1 or 1N2

Plywood drum: 1D

Fiber drum: 1G

Plastic drum: 1H1 or 1H2

Wooden barrel: 2C2

Steel jerrican: 3A1 or 3A2

Plastic jerrican: 3H1 or 3H2

Steel box: 4A1 or 4A2

Aluminum box: 4B1 or 4B2

Natural wood box: 4C1 or 4C2

Plywood box: 4D

Reconstituted wood box: 4F

Fiberboard box: 4G

Solid plastic box: 4H2

Inner packagings:

Glass or earthenware receptacles

Plastic receptacles

Metal receptacles

Glass ampoules

(c) The following single packagings are authorized:

Steel drum: 1A1 or 1A2

Aluminum drum: 1B1 or 1B2

Plywood drum: 1D

Fiber drum: 1G

Plastic drum: 1H1 or 1H2

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

Steel box with liner: 4A2

Steel box: 4A1

Aluminum box with liner: 4B2

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 6IH1

Plastic receptacle in steel, aluminum, wooden, 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 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

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

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PC1

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

requirements of part 178 of this subchapter. Asbestos must be offered for transportation and transported in—

(1) Rigid, leaktight packagings, such as metal, plastic or fiber drums, portable tanks, hopper-type rail cars, or hopper-type motor vehicles;

(2) Bags or other non-rigid packagings in closed freight containers, motor vehicles, or rail cars that are loaded by and for the exclusive use of the consignor and unloaded by the consignee;

(3) Bags or other non-rigid packagings which are dust and sift-proof, when transported by other than private carrier by highway, such packagings containing asbestos must be palletized and unitized by methods such as shrink-wrapping in plastic film or wrapping in fiberboard secured by strapping. Pallets need not be used during transportation by vessel for loads with slings that are unitized by methods such as shrink-wrapping, if the slings adequately and evenly support the loads and the unitizing method prevents shifting of the bags or other non-rigid packagings during conditions normally incident to transportation; or

(4) Bags or other non-rigid packagings which are dust and sift-proof in strong outside fiberboard or wooden boxes.

§ 173.217 Carbon dioxide, solid (dry ice).

(a) Carbon dioxide, solid (dry ice), when offered for transportation or transported by aircraft or water, must be packed in packagings designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings. 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. For each shipment by air exceeding 2.3 kg (5 lbs) per package, advance arrangements must be made between the shipper and each carrier.

(b) Railroad cars and motor vehicles containing solid carbon dioxide, when accepted for transportation on board ocean vessels, must be conspicuously marked on two sides "WARNING CO₂ SOLID (DRY ICE)".

(c) Other packagings containing solid carbon dioxide, when offered or accepted for transportation on board ocean vessels, must be marked "CARBON DIOXIDE, SOLID—DO NOT STOW BELOW DECKS."

(d) Not more than 200 kg (441 pounds) of solid carbon dioxide may be transported in any one cargo compartment or bin on any aircraft except by specific and special written arrangement between the shipper and the aircraft operator.

§ 173.218 Asbestos, blue, brown or white.

(a) Asbestos, blue, brown or white, includes each of the following hydrated mineral silicates: chrysotile, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, actinolite asbestos, and every product containing any of these materials.

(b) Asbestos which is immersed or fixed in a natural or artificial binder material (such as cement, plastic, asphalt, resins or mineral ore), and manufactured products containing asbestos are not subject to the requirements of this subchapter.

(c) Packagings for asbestos must conform to the general packaging requirements of subpart B of this part but need not conform to the

(b) *Cartridges, small arms, and cartridges power devices.* (1) Cartridges, small arms, and cartridges power devices (which are used to project fastening devices) which have been classed as a Division 1.4S explosive may be reclassified, offered for transportation, and transported as ORM-D material when packaged in accordance with paragraph (b)(2) of this section; such transportation is excepted from the requirements of subparts E (Labeling) and F (Placarding) of part 172 of this subchapter. Cartridges, small arms, and cartridges power devices that may be shipped as ORM-D material is limited to:

- (i) Ammunition for rifle, pistol or shotgun;
- (ii) Ammunition with inert projectiles or blank ammunition;
- (iii) Ammunition having no tear gas, incendiary, or detonating explosive projectiles; and
- (iv) Ammunition not exceeding 12.7 mm (50 caliber or 0.5 inch) for rifle or pistol, cartridges or 8 gauge for shotshells.

(2) Packaging for cartridges, small arms, and cartridges power devices as ORM-D material must be as follows:

- (i) Ammunition must be packed in inside boxes, or in partitions which fit snugly in the outside packaging, or in metal clips;
- (ii) Primers must be protected from accidental initiation;
- (iii) Inside boxes, partitions or metal clips must be packed in securely-closed strong outside packagings; and
- (iv) Maximum gross weight is limited to 30 kg (66 pounds) per package.

(c) *Compressed gases.* A compressed gas which conforms to the provisions of paragraph (a)(1), (a)(3) except (a)(3)(vi), or (b) except (b)(1)(iii) of § 173.306 of this subchapter and is a "Consumer commodity" as defined in § 171.8 of this subchapter may be renamed "Consumer commodity" and reclassified as ORM-D material. Each completed package must conform to the requirements of Subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. Shipments are excepted from the requirements of Subparts E (Labeling) and F (Placarding) of Part 172 of this subchapter.

(d) Other consumer commodity exceptions are provided for Class (or Division) 3, 4.1, 5.1, 5.2, 6.2, 8 or 9 materials, if the § 172.101 Table entry for the specific material refers to, and the material meets the provisions in §§ 173.150, 173.151, 173.152, 173.153, 173.154 or 173.155, as appropriate.

Subpart F—Bulk Packaging for Hazardous Materials Other Than Class 1 and Class 7

§ 173.240 Bulk packaging for certain low hazard solid materials.

When § 172.101 of this subchapter specifies that a hazardous material be packaged under this section, only the following bulk packagings are authorized, subject to the requirements of subparts A and B of part 173 of this subchapter and the special provisions specified in Column 7 of the § 172.101 Table.

(a) *Rail cars:* Class DOT 103, 104, 105, 109, 111, 112, 114, or 115 tank car tanks; Class 106 or 110 multi-unit tank car tanks; AAR Class 203W, 206W, and 211W tank car tanks; and metal non-DOT specification, sift-proof tank car tanks and sift-proof closed cars.

(b) *Motor vehicles:* Specification MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, MC 312, MC 330, MC 331, DOT 406, DOT 407, and DOT 412 cargo tank motor vehicles; non-DOT specification, sift-proof cargo tank motor vehicles; and sift-proof closed vehicles.

(c) *Portable tanks and closed bins:* DOT 51, 52, 53, 56, 57 and 60 portable tanks; IM 101 and 102 portable tanks; marine portable tanks conforming to 46 CFR 64; and sift-proof non-DOT specification portable tanks and closed bins.

§ 173.241 Bulk packagings for certain low hazard liquid and solid materials

When § 172.101 of this subchapter specifies that a hazardous material be packaged under this section, only the following bulk packagings are authorized, subject to the requirements of subparts A and B of part 173 of this subchapter and the special provisions specified in Column 7 of the § 172.101 Table.

(a) *Rail cars:* Class DOT 103, 104, 105, 109, 111, 112, 114, or 115 tank car tanks; Class 106 or 110 multi-unit tank car tanks and AAR Class 203W, 206W, and 211W tank car tanks.

(b) *Cargo tanks:* DOT specification MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, MC 312, MC 330, MC 331, DOT 406, DOT 407, and DOT 412 cargo tank motor vehicles; and non-DOT specification cargo tank motor vehicles suitable for transport of liquids.

(c) *Portable tanks:* DOT 51, 52, 53, 56, 57 and 60 portable tanks; IM 101 and 102 portable tanks; marine portable tanks conforming to 46 CFR 64; and non-DOT specification portable tanks suitable for transport of liquids. DOT 57 portable tanks used for the transportation by

vessel of Class 3, Packing Group II, materials must conform to the following:

(1) Each tank must have a minimum design pressure of 62 kPa (9 psig) and be equipped in accordance with § 178.253-4 of this subchapter, except that frangible devices are not authorized; and

(2) No pressure relief device may open at less than 34.4 kPa (5 psig).

§ 173.242 Bulk packagings for certain medium hazard liquids and solids, including solids with dual hazards.

When § 172.101 of this subchapter specifies that a hazardous material be packaged under this section, only the following bulk packagings are authorized, subject to the requirements of subparts A and B of part 173 of this subchapter and the special provisions specified in Column 7 of the § 172.101 Table.

(a) *Rail cars:* Class DOT 103, 104, 105, 109, 111, 112, 114, or 115 tank car tanks; Class 106 or 110 multi-unit tank car tanks and AAR Class 206W tank car tanks. Except for DOT Specification 111A100W4 and 111J100W4 tank car tanks, Class DOT 103, 104, and 111 tank car tanks used to transport materials meeting the definition of a Class 3 material in § 173.121 of this subchapter, must have closures so designed that pressure will be released automatically and safely in the process of removing the manway cover.

(b) *Cargo tanks:* Specification MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, MC 312, MC 330, MC 331, DOT 406, DOT 407, and DOT 412 cargo tank motor vehicles. Cargo tanks used to transport Class 3, Packing Group I or II, or Packing Group III with a flash point of less than 38 °C (100 °F); Class 6, Packing Group I or II; and Class 8, Packing Group I or II materials must conform to the following special requirements:

(1) Pressure relief system: Except as provided by § 173.33(d), each cargo tank must be equipped with a pressure relief system meeting the requirements of § 178.346-10 or § 178.347-10 of this subchapter. However, pressure relief devices on MC 310, MC 311 and MC 312 cargo tanks must meet the requirements for a Specification MC 307 cargo tank. Pressure relief devices on MC 330 and MC 331 cargo tanks must meet the requirement in § 178.337-9 of this subchapter.

(2) Bottom outlets: DOT 406, DOT 407 and DOT 412 must be equipped with stop-valves meeting the requirements of § 178.345-11 of this subchapter; MC 304, MC 307, MC 310, MC 311, and MC 312 cargo tanks must be equipped with stop-valves capable of being remotely closed