

(ii) Primary containers must be packed into trays that secure individual containers from shifting inside the completed combination package during transportation;

(iii) Tray(s) must be placed into a fiberboard box, and the fiberboard box must be banded and secured to a pallet by metal, fabric, or plastic straps to form a single palletized unit; and

(iv) The maximum net quantity of hazardous material permitted in one palletized unit is 550 kg (1,210 lbs.).

(2) *Marking.* The outside of each package must be plainly and durably marked in accordance with one of the following, as appropriate:

(i) As a consumer commodity as prescribed in §172.316 of this subchapter; or

(ii) As a limited quantity as prescribed in §172.315 of this subchapter.

(d) *Exceptions for waste limited quantity materials.* Exceptions for certain waste limited quantity materials are prescribed in §173.12(h).

[78 FR 1114, Jan. 7, 2013, as amended at 78 FR 65481, Oct. 31, 2013; 80 FR 72924, Nov. 23, 2015; 81 FR 3673, Jan. 21, 2016; 83 FR 55809, Nov. 7, 2018; 87 FR 79776, Dec. 27, 2022]

**§ 173.157 Reverse logistics—General requirements and exceptions for reverse logistics.**

(a) *Authorized hazardous materials.* Hazardous materials may be offered for transport and transported in highway transportation under this section when they meet the definition of reverse logistics as defined under §171.8 of this subchapter. However, hazardous materials that meet the definition of a hazardous waste as defined in §171.8 of this subchapter are not permitted to be offered for transport or transported under this section. Hazardous materials authorized for transport according to a special permit as defined in §171.8 of this subchapter must be offered for transportation and transported as authorized by the special permit.

(b) *When offered for transport or transported by non-private carrier.* Hazardous materials must be both authorized for limited quantity provisions as well as explicitly authorized for reverse logistics transportation under their applicable limited quantities section. Except

for alternative training provisions authorized under paragraph (e) of this section, all hazardous materials must otherwise meet the requirements for a limited quantity shipment.

(c) *When offered for transport or transported by private carrier.* Hazardous materials are authorized under paragraph (b) of this section or are subject to the following limitations:

(1) Division 1.4G materials offered for transport and transported in accordance with §173.65 of this subchapter.

(2) When sold in retail facilities; Division 1.4G or 1.4S fireworks, Division 1.4G ammunition, or Division 1.4G or 1.4S flares. Shipments offered for transport or transported under this subparagraph are limited to 30 kg (66 pounds) per package. All explosive materials subject to an approval must meet the terms of the approval, including packaging required by the approval.

(3) Equipment powered by flammable liquids or flammable gases.

(i) *Flammable liquid-powered equipment.* The fuel tank and fuel lines of equipment powered by an internal combustion engine must be in the closed position, and all fuel tank caps or closures must be securely in place.

(ii) *Flammable gas-powered equipment.* A combustion engine using flammable gas fuel or other devices using flammable gas fuel (such as camping equipment, lighting devices, and torch kits) must have the flammable gas source disconnected and all shut-off devices in the closed position.

(4) Division 2.1 or 2.2 compressed gases weighing less than 66 pounds and sold as retail products. For the purposes of this section a cylinder or aerosol container may be assumed to meet the definition of a Division 2.1 or 2.2 materials, respectively, even if the exact pressure is unknown.

(5) Materials shipped under this paragraph (c) must also comply with the segregation requirements as required in §177.848.

(6) Shipments made under this section are subject to the incident reporting requirements in §171.15.

(d) *Hazard communication.* Hazardous materials offered for transportation and transported by private carrier in accordance with paragraph (c) of this

section may use the marking “REVERSE LOGISTICS—HIGHWAY TRANSPORT ONLY—UNDER 49 CFR 173.157” as an alternative to the surface limited quantity marking found under §172.315(a). Size marking requirements found in §172.301(a)(1) apply.

(e) *Training.* (1) Any person preparing a shipment under this section must have clear instructions on preparing the reverse logistics shipment to the supplier, manufacturer, or distributor from the retail store. This includes information to properly classify, package, mark, offer, and transport. These instructions must be provided by the supplier, manufacturer, or distributor to ensure the shipment is correctly prepared for transportation or through training requirements prescribed under part 172 subpart H of this subchapter.

(2) Employers who do not provide training under part 172 subpart H of this subchapter must:

(i) Identify hazardous materials subject to the provisions of this section, verify compliance with the appropriate conditions and limitations, as well as ensure clear instructions from the manufacturer, supplier, or distributor associated with product’s origination or destination;

(ii) Ensure clear instructions provided are known and accessible to the employee at the time they are preparing the shipment; and

(iii) Document that employees are familiar with the requirements of this section as well as the specific return instructions for the products offered under this section. Documentation must be retained while the employee is employed and 60-days thereafter. Alternatively, recordkeeping requirements under part 172 subpart H may be used.

[81 FR 18540, Mar. 31, 2016]

**Subpart E—Non-bulk Packaging for Hazardous Materials Other Than Class 1 and Class 7**

SOURCE: Amdt. 173–224, 55 FR 52643, Dec. 21, 1990, unless otherwise noted.

**§ 173.158 Nitric acid.**

(a) Nitric acid exceeding 40 percent concentration may not be packaged with any other material.

(b) Nitric acid in any concentration which does not contain sulfuric acid or hydrochloric acid as impurities, when offered for transportation or transported by rail, highway, or water shall be packaged in specification containers as follows:

(1) 1A1 stainless steel drums are authorized, subject to the following limitations:

(i) Stainless steel used in drums must conform to the following thicknesses:

Nominal (marked) capacity (in liters) of 1A1 drum	Minimum thickness (in mm) of stainless steel
55	0.9
115	1.2
210	1.5
450	2.0

(ii) Drums weighing less than 85 percent of their original tare weight may not be used.

(iii) Type 304 or other grades of equivalent corrosion-resistant steels in the as-welded condition are permissible for nitric acid concentrations up to and including 78 percent.

(iv) For all concentrations of nitric acid, the following are permissible:

(A) Type 304 heat-treated (quenched in water at 1040 °C (1900 °F)),

(B) Stabilized Type 347 in the as-welded condition,

(C) Stabilized Type 347 stress-relieved (845–900 °C (1550–1650 °F)),

(D) Stabilized Type 347 heat-treated (quenched in water at 1040 °C (1900 °F)), or

(E) Other grades of equivalent corrosion resistance.

(v) All parts of drum exposed to lading must be capable of withstanding the corrosive effect of nitric acid to the extent that 65 percent boiling nitric acid does not penetrate the metal more than 0.0381 mm (0.002 inches) per month. (ASTM A 262 may be used for a suitable corrosion test procedure.)

(vi) In addition to marking required by §178.503 of this subchapter, the following marks, in lettering of at least 12.7 mm (0.5 inch) height, must be placed on drums used to transport nitric acid:

(A) The type of steel used in body and head sheets as identified by American Iron and Steel Institute type number,