Pipeline and Hazardous Materials Safety Admin., DOT

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(g) Cryogenic liquids. For shipment of cryogenic liquids on board a vessel the packaging must be designed and filled so that:

1. Any cryogenic liquid being transported in a cargo tank, regardless of the pressure in the package, must be contained in a steel jacketed Specification MC–338 (§178.338 of this subchapter) insulated cargo tank.

2. Any valve or fitting with moving or abrading parts that may come in contact with any cryogenic liquid may not be made of aluminum.

3. For a flammable cryogenic liquid being transported in a cargo tank, the elapsed time between the loading of the cargo tank and the subsequent unloading of the cargo tank at its final destination may not exceed the marked rated holding time (MRHT) of the cargo tank for the cryogenic liquid being transported, which must be displayed on or adjacent to the specification plate.

4. Portable tanks, cargo tanks, and tank cars containing cryogenic liquids must be stowed “on deck” regardless of the stowage authorized in §172.101 of this subchapter. Cargo tanks or tank cars containing cryogenic liquids may be stowed one deck below the weather deck when transported on a trailership or trainship that is unable to provide “on deck” stowage because of the vessel’s design. Tank cars must be Class DOT-113 or AAR–204W tank cars.

(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 packaged 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.

§ 176.77 Stowage of barges containing hazardous materials on board barge-carrying vessels.

(a) A barge which contains hazardous materials may be transported on board a barge-carrying vessel if it is stowed in accordance with the requirements of this section.

(b) A barge which contains hazardous materials for which only “on deck” stowage is authorized must be stowed above the weather deck and be vented to the atmosphere.

(c) A barge which contains hazardous materials for which both “on deck” and “below deck” storage is authorized may be stowed above or below the weather deck.

§ 176.78 Use of power-operated industrial trucks on board vessels.

(a) Power Operated trucks. A power-operated truck (including a power-operated tractor, forklift, or other specialized truck used for cargo handling) may not be used on board a vessel in a space containing a hazardous material unless the truck conforms to the requirements of this section. The COTP may suspend or prohibit the use of cargo handling vehicles or equipment.
when that use constitutes a safety hazard.

(b) Each truck must have a specific designation of Underwriter’s Laboratories or Factory Mutual Laboratories. Any repair or alteration to a truck must be equivalent to that required on the original designation.

(c) Description of designations. The recognized testing laboratory type designations are as follows:

1. An “E” designated unit is an electrically-powered unit that has minimum acceptable safeguards against inherent fire hazards.

2. An “EE” designated unit is an electrically-powered unit that has, in addition to all the requirements for the “E” unit, the electric motor and all other electrical equipment completely enclosed.

3. An “EX” designated unit is an electrically-powered unit that differs from the “E” and “EE” unit in that the electrical fittings and equipment are so designed, constructed, and assembled that the unit may be used in certain atmospheres containing flammable vapors or dusts.

4. A “G” designated unit is a gasoline-powered unit having minimum acceptable safeguards against inherent fire hazards.

5. A “GS” designated unit is a gasoline-powered unit that is provided with additional safeguards to the exhaust, fuel, and electrical systems.

6. An “LP” designated unit is similar to a “G” unit except that it is powered by liquefied petroleum gas instead of gasoline.

7. An “LPS” designated unit is a unit similar to a “GS” unit except that liquefied petroleum gas is used for fuel instead of gasoline.

8. A “D” designated unit is a unit similar to a “G” unit except that it is powered by a diesel engine instead of a gasoline engine.

9. A “DS” designated unit is a unit powered by a diesel engine provided with additional safeguards to the exhaust, fuel, and electrical systems.

(d) Class 1 (explosive) materials. No power-operated truck may be used to handle Class 1 (explosive) materials or other cargo in an area near Class 1 (explosive) materials on board a vessel except:

1. A power-operated truck designated EE or EX.

2. A power-operated truck designated LPS, GS, D, or DS may be used under conditions acceptable to the COTP.

(e) Other hazardous materials. (1) Only an “EX”, “EE”, “GS”, “LPA”, or “DS” truck may be used in a hold or compartment containing Division 2.1 (flammable gas) materials, Class 3 (flammable liquids), Class 4 (flammable solids) materials, or Class 5 (oxidizers or organic peroxides) materials, cottons or other vegetable fibers, or bulk sulfur.

(2) Only a designated truck may be used to handle any other hazardous material not covered in paragraph (d) or (e)(1) of this section.

(f) Minimum safety features. In addition to the construction and design safety features required, each truck must have at least the following minimum safety features:

1. The truck must be equipped with a warning horn, whistle, gong, or other device that may be heard clearly above normal shipboard noises.

2. When the truck operation may expose the operator to danger from a falling object, the truck must be equipped with a driver’s overhead guard. When the overall height of the truck with forks in the lowered position is limited by head room the overhead guard may be omitted. This overhead guard is only intended to offer protection from impact of small packages, boxes, bagged material, or similar hazards.

3. A forklift truck used to handle small objects or unstable loads must be equipped with a load backrest extension having height, width, and strength sufficient to prevent any load, or part of it, from falling toward the mast when the mast is in a position of maximum backward tilt. The load backrest extension must be constructed in a manner that does not interfere with good visibility.

4. The forks on a forklift truck must be secured to the carriage so as to prevent any unintentional lifting of the toe which could create a hazard. The forks may not display permanent deformation when subjected to a test load of three times the rated capacity.
(5) Each fork extension or other attachment must be secured to prevent unintentional lifting or displacement on primary forks.

(6) Tires extending beyond the confines of the truck shall be provided with a guard to prevent the tires from throwing particles at the operator.

(7) Unless the steering mechanism is a type that prevents road reactions from causing the steering handwheel to spin, a mushroom type steering knob must be used to engage the palm of the operator's hand, or the steering mechanism must be arranged in some other manner to prevent injury. The knob must be mounted within the perimeter of the wheel.

(8) All steering controls must be confined within the clearance of the truck or guarded so that moving of the controls will not result in injury to the operator when passing stanchions, obstructions or other.

(g) Special operating conditions. (1) A truck may not be used on board a vessel unless prior notification of its use is given to the master or senior deck officer on board.

(2) Before a truck is operated on board a vessel, it must be in a safe operating condition as determined by the master or senior deck officer on board.

(3) Any truck that emits sparks or flames from the exhaust system must immediately be removed from service and may not be returned to service until the cause of these sparks or flames has been eliminated.

(4)–(5) [Reserved]

(6) All truck motors must be shut off immediately when a breakage or leakage of packages containing flammable liquids or gases, flammable solids, oxidizers, or organic peroxides occurs or is discovered.

(7) The rated capacity of the truck must be posted on the truck at all times in a conspicuous place. This capacity may not be exceeded.

(8) At least one Coast Guard approved marine type size 1 Type B, or UL approved 5BC portable fire extinguisher, or its approved equivalent, must be affixed to the truck in a readily accessible position or must be kept in close proximity, available for immediate use.

(9) The vessel's fire fighting equipment, both fixed (where installed) and portable, must be kept ready for immediate use in the vicinity of the space being worked.

(h) Refueling. (1) A truck using gasoline as fuel may not be refueled in the hold or on the weather deck of a vessel unless a portable non-spilling fuel handling system of not over five gallons capacity is used. Gasoline may not be transferred to a portable non-spilling fuel handling device on board the vessel.

(2) A truck using liquefied petroleum gas as fuel may not be refueled in the hold or on the weather deck of a vessel unless it is fitted with a removable tank and the hand-operated shutoff valve of the depleted tank is closed. In addition, the motor must be run until it stalls from lack of fuel and then the hand-operated shutoff valve closed before the quick disconnect fitting to the fuel tank is disconnected.

(3) A truck using diesel oil as fuel may not be refueled on the weather deck or in the hold of a vessel unless a portable container of not over a five gallon capacity is used. A truck may be refueled or a portable container may be refilled from a larger container of diesel fuel on the weather deck of a vessel if a suitable pump is used for the transfer operation and a drip pan of adequate size is used to prevent any dripping of fuel on the deck.

(4) Refueling must be performed under the direct supervision of an experienced and responsible person specifically designated for this duty by the person in charge of the loading or unloading of the vessel.

(5) Refueling may not be undertaken with less than two persons specifically assigned and present for the complete operation, at least one of whom must be experienced in using the portable fire extinguishers required in the fuel area.

(6) At least one Coast Guard approved marine type size 1 Type B or UL approved 5BC portable fire extinguisher or its approved equivalent, must be provided in the fueling area. This is in addition to the extinguisher required by paragraph (g)(8) of this section.

(7) The location for refueling trucks must be designated by the master or
§ 176.80  Applicability.

(a) This subpart sets forth segregation requirements in addition to any segregation requirements set forth elsewhere in this subchapter.