restrictions which apply when the device must not be used.

(A) Use restrictions. An automatic cargo-space-heating temperature control device may be used when transporting Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials only if each of the following requirements is met:

(1) Electrical apparatus in the cargo compartment is nonsparking or explosion proof.

(2) There is no combustion apparatus in the cargo compartment.

(3) There is no connection for return of air from the cargo compartment to the combustion apparatus.

(4) The heating system will not heat any part of the cargo to more than 54 °C (129 °F).

(5) Heater requirements under §393.77 of this title are complied with.

(B) Protection against use. Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials may be transported by a vehicle, which is equipped with an automatic cargo-space-heating temperature control device that does not meet each requirement of paragraph (l)(2)(iii)(A) of this section, only if the device is first rendered inoperable, as follows:

(1) Each cargo heater fuel tank, if other than LPG, must be emptied or removed.

(2) Each LPG fuel tank for automatic temperature control equipment must have its discharge valve closed and its fuel feed line disconnected.

(m) Tanks constructed and maintained in compliance with Spec. 106A or 110A (§§179.300, 179.301 of this subchapter) that are authorized for the shipment of hazardous materials by highway in part 173 of this subchapter must be carried in accordance with the following requirements:

(1) Tanks must be securely chocked or clamped on vehicles to prevent any shifting.

(2) Equipment suitable for handling a tank must be provided at any point where a tank is to be loaded upon or removed from a vehicle.

(3) No more than two cargo carrying vehicles may be in the same combination of vehicles.

(4) Compliance with §§174.200 and 174.204 of this subchapter for combination rail freight, highway shipments and for trailer-on-flat-car service is required.

(n) Specification 56, 57, IM 101, and IM 102 portable tanks, when loaded, may not be stacked on each other nor placed under other freight during transportation by motor vehicle.

(o) Unloading of IM and UN portable tanks. No person may unload an IM or UN portable tank while it remains on a transport vehicle with the motive power unit attached except under the following conditions:

(1) The unloading operation must be attended by a qualified person in accordance with the requirements in paragraph (i) of this section. The person performing unloading functions must be trained in handling emergencies that may occur during the unloading operation.

(2) Prior to unloading, the operator of the vehicle on which the portable tank is transported must ascertain that the conditions of this paragraph (o) are met.

(3) An IM or UN portable tank equipped with a bottom outlet as authorized in Column (7) of the §172.101 Table of this subchapter by assignment of a T Code in the appropriate proper shipping name entry, and that contains a liquid hazardous material of Class 3, PG I or II, or PG III with a flash point of less than 100 °F (38 °C); Division 5.1, PG I or II; or Division 6.1, PG I or II, must conform to the outlet requirements in §178.275(d)(3) of this subchapter.


EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §177.834, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and at www.fdsys.gov.

§177.835 Class I materials.

(See also §177.834 (a) to (j).)

(a) Engine stopped. No Class 1 (explosive) materials shall be loaded into or on or be unloaded from any motor vehicle with the engine running.

(b) Care in loading, unloading, or other handling of Class 1 (explosive) materials. No bale hooks or other metal tools
shall be used for the loading, unloading, or other handling of Class 1 (explosive) materials, nor shall any package or other container of Class 1 (explosive) materials, except barrels or kegs, be rolled. No packages of Class 1 (explosive) materials shall be thrown or dropped during process of loading or unloading or handling of Class 1 (explosive) materials. Special care shall be exercised to the end that packages or other containers containing Class 1 (explosive) materials shall not catch fire from sparks or hot gases from the exhaust tailpipe.

(1) Whenever tarpaulins are used for covering Class 1 (explosive) materials, they shall be secured by means of rope, wire, or other equally efficient tie downs. Class 1 (explosive) materials placards or markings required by §177.823 shall be secured, in the appropriate locations, directly to the equipment transporting the Class 1 (explosive) materials. If the vehicle is provided with placard boards, the placards must be applied to these boards.

(2) [Reserved]

class 1 (explosive) materials on vehicles in combination. Division 1.1 or 1.2 (explosive) materials may not be loaded into or carried on any vehicle or a combination of vehicles if:

1. More than two cargo carrying vehicles are in the combination;
2. Any full trailer in the combination has a wheel base of less than 184 inches;
3. Any vehicle in the combination is a cargo tank which is required to be marked or placarded under §177.823; or
4. The other vehicle in the combination contains any:
   (1) Substances, explosive, n.o.s., Division 1.1A (explosive) material (Initiating explosive),
   (2) Packages of Class 7 (radioactive) materials bearing “Yellow III” labels,
   (3) Division 2.3, Hazard Zone A or Hazard Zone B materials or Division 6.1, PG I, Hazard Zone A materials, or
   (iv) Hazardous materials in a portable tank or a DOT specification 106A or 110A tank.

(d) [Reserved]

e. No sharp projections inside body of vehicles. No motor vehicle transporting any kind of Class 1 (explosive) material shall have on the interior of the body in which the Class 1 (explosive) materials are contained, any inwardly projecting bolts, screws, nails, or other inwardly projecting parts likely to produce damage to any package or container of Class 1 (explosive) materials during the loading or unloading process or in transit.

(1) Class 1 (explosive) materials vehicles, floors tight and lined. Motor vehicles transporting Division 1.1, 1.2, or 1.3 (explosive) materials shall have tight floors; shall have that portion of the interior in contact with the load lined with either non-metallic material or non-ferrous metals, except that the lining is not required for truck load shipments loaded by the Departments of the Army, Navy or Air Force of the United States Government provided the Class 1 (explosive) materials are of such nature that they are not liable to leakage of dust, powder, or vapor which might become the cause of an explosion. The interior of the cargo space must be in good condition so that there will not be any likelihood of containers being damaged by exposed bolts, nuts, broken side panels or floor boards, or any similar projections.

(g) No detonator assembly or booster with detonator may be transported on the same motor vehicle with any Division 1.1, 1.2 or 1.3 material (except other detonator assemblies, boosters with detonators or detonators), detonating cord Division 1.4 material or Division 1.5 material. No detonator may be transported on the same motor vehicle with any Division 1.1, 1.2 or 1.3 material (except other detonators, detonator assemblies or boosters with detonators), detonating cord Division 1.4 material or Division 1.5 material unless—

1. It is packed in a specification MC 201 (§178.318 of this subchapter) container; or
2. The package conforms with requirements prescribed in §173.62 of this subchapter, and its use is restricted to instances when—
   (i) There is no Division 1.1, 1.2, 1.3 or 1.5 material loaded on the motor vehicle; and
   (ii) A separation of 61 cm (24 inches) is maintained between each package of detonators and each package of detonating cord; or
§ 177.837 Class 3 materials.

(a) Engine stopped. Unless the engine of a cargo tank motor vehicle is to be used for the operation of a pump, Class 3 material may not be loaded into, or on, or unloaded from any cargo tank motor vehicle while the engine is running. The diesel engine of a cargo tank motor vehicle may be left running during the loading and unloading of a Class 3 material if the ambient atmospheric temperature is at or below −12 °C (10 °F).

(b) Bonding and grounding containers other than cargo tanks prior to and during transfer of lading. For containers which are not in metallic contact with each other, either metallic bonds or ground conductors shall be provided for...