

1 (explosive) materials must either have a closed body or have the body thereof covered with a tarpaulin, and in either event care must be taken to protect the load from moisture and sparks, except that subject to other provisions of these regulations, Class 1 (explosive) materials other than black powder may be transported on flat-bed vehicles if the explosive portion of the load on each vehicle is packed in fire and water resistant containers or covered with a fire and water resistant tarpaulin.

(i) *Class 1 (explosive) materials to be protected against damage by other lading.* No motor vehicle transporting any Class 1 (explosive) material may transport as a part of its load any metal or other articles or materials likely to damage such Class 1 (explosive) material or any package in which it is contained, unless the different parts of such load be so segregated or secured in place in or on the motor vehicle and separated by bulkheads or other suitable means as to prevent such damage.

(j) *Transfer of Class 1 (explosive) materials en route.* No Division 1.1, 1.2, or 1.3 (explosive) material shall be transferred from one container to another, or from one motor vehicle to another vehicle, or from another vehicle to a motor vehicle, on any public highway, street, or road, except in case of emergency. In such cases red electric lanterns, red emergency reflectors or red flags shall be set out in the manner prescribed for disabled or stopped motor vehicles. (See Motor Carrier Safety Regulations, part 392 of this title.) In any event, all practicable means, in addition to these hereinbefore prescribed, shall be taken to protect and warn other users of the highway against the hazard involved in any such transfer or against the hazard occasioned by the emergency making such transfer necessary.

(k) *Attendance of Class 1 (explosive) materials.* Division 1.1, 1.2, or 1.3 materials that are stored during transportation in commerce must be attended and afforded surveillance in accordance with 49 CFR 397.5. A safe haven that conforms to NFPA 498 (IBR, see §171.7 of the subchapter) constitutes a federally approved safe haven for the unat-

tended storage of vehicles containing Division 1.1, 1.2, or 1.3 materials.

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EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §177.835, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 177.837 Class 3 (flammable liquid) materials.

(See also §177.834 (a) to (j).)

(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 the neutralization of possible static charges prior to and during transfers of Class 3 (flammable liquid) materials between such containers. Such bonding shall be made by first connecting an electric conductor to the container to be filled and subsequently connecting the conductor to the container from which the liquid is to come, and not in any other order. To provide against ignition of vapors by discharge of static electricity, the latter connection shall be made at a point well removed from the opening from which the Class 3 (flammable liquid) material is to be discharged.

(c) *Bonding and grounding cargo tanks before and during transfer of lading.* (1) When a cargo tank is loaded through an open filling hole, one end of a bond wire shall be connected to the stationary system piping or integrally connected steel framing, and the other end to the shell of the cargo tank to provide a continuous electrical connection. (If bonding is to the framing, it is essential that piping and framing be

electrically interconnected.) This connection must be made before any filling hole is opened, and must remain in place until after the last filling hole has been closed. Additional bond wires are not needed around All-Metal flexible or swivel joints, but are required for nonmetallic flexible connections in the stationary system piping. When a cargo tank is unloaded by a suction-piping system through an open filling hole of the cargo tank, electrical continuity shall be maintained from cargo tank to receiving tank.

(2) When a cargo tank is loaded or unloaded through a vapor-tight (not open hole) top or bottom connection, so that there is no release of vapor at a point where a spark could occur, bonding or grounding is not required. Contact of the closed connection must be made before flow starts and must not be broken until after the flow is completed.

(3) Bonding or grounding is not required when a cargo tank is unloaded through a nonvapor-tight connection into a stationary tank provided the metallic filling connection is maintained in contact with the filling hole.

(d) *Unloading combustible liquids.* For a cargo tank unloading a material meeting the definition for combustible liquid in §173.150(f) of this subchapter, the qualified person attending the unloading operation must remain within 45.72 meters (150 feet) of the cargo tank and 7.62 meters (25 feet) of the delivery hose and must observe both the cargo tank and the receiving container at least once every five minutes during unloading operations that take more than five minutes to complete.

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§ 177.838 Class 4 (flammable solid) materials, Class 5 (oxidizing) materials, and Division 4.2 (self-heating and pyrophoric liquid) materials.

(See also §177.834 (a) to (j).)

(a) *Lading within body or covered; tailgate closed; pick-up and delivery.* All of that portion of the lading of any motor vehicle transporting Class 4 (flam-

mable solid) or Class 5 (oxidizing) materials shall be contained entirely within the body of the motor vehicle and shall be covered by such body, by tarpaulins, or other suitable means, and if such motor vehicle has a tailboard or tailgate, it shall be closed and secured in place during such transportation: *Provided, however,* That the provisions of this paragraph need not apply to “pick-up and delivery” motor vehicles when such motor vehicles are used in no other transportation than in and about cities, towns, or villages. Shipment in water-tight bulk containers need not be covered by a tarpaulin or other means.

(b) *Articles to be kept dry.* Special care shall be taken in the loading of any motor vehicle with Class 4 (flammable solid) or Class 5 (oxidizing) materials which are likely to become hazardous to transport when wet, to keep them from being wetted during the loading process and to keep them dry during transit. Special care shall also be taken in the loading of any motor vehicle with Class 4 (flammable solid) or Class 5 (oxidizing) materials, which are likely to become more hazardous to transport by wetting, to keep them from being wetted during the loading process and to keep them dry during transit. Examples of such dangerous materials are charcoal screenings, ground, crushed, or pulverized charcoal, and lump charcoal.

(c) *Lading ventilation, precautions against spontaneous combustion.* Whenever a motor carrier has knowledge concerning the hazards of spontaneous combustion or heating of any article to be loaded on a motor vehicle, such article shall be so loaded as to afford sufficient ventilation of the load to provide reasonable assurance against fire from this cause; and in such a case the motor vehicle shall be unloaded as soon as practicable after reaching its destination. Charcoal screenings, or ground, crushed, granulated, or pulverized charcoal, in bags, shall be so loaded that the bags are laid horizontally in the motor vehicle, and so piled that there will be spaces for effective air circulation, which spaces shall not be less than 10 cm (3.9 inches) wide; and air spaces shall be maintained between rows of bags. Bags shall not be piled