

WAC 296-24-93503 General requirements. (1) **Application.** See WAC 296-24-93003(1).

(2) **Specifications and tests.** All safety relief devices covered by these standards must meet the design, construction, marking, and test specifications of the "Compressed Gas Association Safety Relief Device Standards Part 2-Cargo and Portable Tanks for Compressed Gases: S-1.2-1963."

(3) **Specific requirements for safety relief devices.**

(a) You must provide each container with one or more safety relief devices which, unless otherwise specified, must be safety relief valves of the spring-loaded type.

(b) You must set safety relief valves to start-to-discharge at a pressure not in excess of 110% of the DOT design pressure of the container nor less than the DOT design pressure of the container except as follows:

(i) If an oversized container is used, the set pressure of the safety relief valve may be between the minimum required DOT design pressure for the lading and 110% of the DOT design pressure of the container used.

(ii) For sulfur dioxide containers, a minimum set pressure of 120 and 110 p.s.i.g. is permitted for the 150 and 125 p.s.i.g. DOT design pressure containers, respectively.

(iii) For carbon dioxide (refrigerated), nitrous oxide (refrigerated), and pressurized liquid argon, nitrogen and oxygen, there must be no minimum set pressure.

(iv) For butadiene, inhibited, and liquefied petroleum gas containers, a minimum set pressure of 90% of the minimum design pressure permitted for these loadings may be used.

(v) For containers constructed in accord with paragraph U-68 or U-69 of the Code 1949 Edition, the set pressure marked on the safety relief valve may be 125% of the original DOT design pressure of the container.

(c) You must only use replacement parts or assemblies provided by the manufacturer of the device unless the suitability of interchange is proved by adequate tests.

(d) Safety relief valves must have direct communication with the vapor space of the container.

(e) Any portion of liquid piping or hose which at any time may be closed at each end must be provided with a safety relief device to prevent excessive pressure.

(f) The additional restrictions of this subdivision apply to safety relief devices on containers for carbon dioxide or nitrous oxide which are shipped in refrigerated and insulated containers. The maximum operating pressure in the container may be regulated by the use of one or more pressure controlling devices, which devices must not be in lieu of the safety relief valve required in WAC 296-24-93503 (3) (a).

(g) You must install and locate all safety relief devices so that the cooling effect of the contents will not prevent the effective operation of the device.

(h) In addition to the safety relief valves required by WAC 296-24-93503 (3) (a) each container for carbon dioxide may be equipped with one or more frangible disc safety relief devices of suitable design set to function at a pressure not exceeding two times the DOT design pressure of the container.

(i) Subject to conditions of 49 C.F.R. 173.315 (a)(1) (DOT regulations) for methyl chloride and sulfur dioxide optional portable

tanks of 225 p.s.i.g. minimum DOT design pressure, one or more fusible plugs approved by the Bureau of Explosives, 50 "F" Street Northwest, Washington, D.C. 20001, may be used in lieu of safety relief valves of the spring-loaded type. If the container is over 30 inches long a safety relief device having the total required flow capacity must be at both ends.

(j) When storage containers for liquefied petroleum gas are permitted to be shipped in accordance with 49 C.F.R. 173.315(j) (DOT regulations), they must be equipped with safety relief devices in compliance with the requirements for safety relief devices on above-ground containers as specified in the National Fire Protection Association Pamphlet No. 58-1969 "Standard for the Storage and Handling of Liquefied Petroleum Gases."

(k) When containers are filled by pumping equipment which has a discharge capacity in excess of the capacity of the container safety relief devices, and which is capable of producing pressures in excess of DOT design pressure of the container, precautions should be taken to prevent the development of pressures in the container in excess of 120% of its DOT design pressure. This may be done by providing additional capacity of the safety relief valves on the container, by providing a bypass on the pump discharge, or by any other suitable method.

(l) This additional requirement applies to safety relief devices on containers for liquefied hydrogen and pressurized liquid argon, nitrogen, and oxygen. You must protect the liquid container by one or more safety relief valves and one or more frangible discs.

(m) You must arrange safety relief devices to discharge unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container. You must arrange safety relief devices to discharge upward except this is not required for carbon dioxide, nitrous oxide and pressurized liquid argon, nitrogen, and oxygen.

(n) You must not install any shutoff valves between the safety relief devices and the container except, in cases where two or more safety relief devices are installed on the same container, a shutoff valve may be used where the arrangement of the shutoff valve or valves is such as always to insure full required capacity flow through at least one safety relief device.

(4) Maintenance requirements for safety relief devices.

(a) You must exercise care to avoid damage to safety relief devices. You must also exercise care to avoid plugging by paint or other dirt accumulation of safety relief device channels or other parts which could interfere with the functioning of the device.

(b) You must only allow qualified personnel to service safety relief devices. Any servicing or repairs which require resetting of safety relief valves must be done only by or after consultation with the valve manufacturer.

(c) You must periodically examine safety relief devices externally for corrosion damage, plugging of external safety relief device channels, and mechanical defects such as leakage or extrusion of fusible metal. You must periodically inspect the seals of valves equipped with secondary resilient seals. If there is any doubt regarding the suitability of the safety relief device for service you must not fill the container until it is equipped with a suitable safety relief device.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 15-24-100, § 296-24-93503, filed 12/1/15, effective 1/5/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-24-93503, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-93503, filed 5/9/73 and Order 73-4, § 296-24-93503, filed 5/7/73.]