



Sacramento Metropolitan Fire District

Community Risk Reduction Division

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CRYOGENIC FLUIDS CHECKLIST

California Fire Code Chapter 55

Scope

An operational permit is required to produce, store, transport on site, use, handle or dispense cryogenic fluids in excess of the amounts listed in Chapter 1, Table 105.6.10.

Partially full containers containing residual cryogenic fluid shall be considered as full.

Conditions:

- Cryogenic liquid containers meet the requirements set forth in the CFC 5503.1.
- Containers are on substantial concrete/masonry foundation or steel supports attached to concrete/masonry foundation. (CFC 5503.1.3)
- Portions of container in contact with foundation or steel support are provided corrosion protection. (CFC 5503.1.3.2)
- Pressure relief devices are provided and maintained at containers and associated equipment. (CFC 5503.2)
- Hazard identification (i.e. NFPA 704 placard) is provided at building entrances.(CFC 5503.4.1)
- Containers are labeled with their contents (i.e. chemical name and hazard class). (CFC 5503.4.2)
- Container nameplate and container connection, control, valve and gauge identification is provided. (CFC 5503.4.3/5503.4.4)
- Piping systems are marked with the content name, content color and direction of flow at 20 foot intervals and at each valve, change of direction and at wall, floor, or ceiling penetrations. (CFC 5503.4.5)
- Emergency shut-off valves are identified, visible and indicated by sign. (CFC 5503.4.6)
- Containers and systems are secured against unauthorized entry. (CFC 5503.5)
- Stationary containers are secured to a foundation and portable containers are secured to prevent damage. (CFC 5503.5.2)
- Vaporizers, heat exchangers and similar equipment are anchored to a foundation. (CFC 5503.5.3)

- Containers, piping, valves, relief devices, regulating equipment and other appurtenances are protected against physical damage, tampering and corrosion. (CFC 5503.5.4)
- Electrical and electronic equipment is provided and maintained where applicable. (CFC 5503.6)
- Containers and systems are not used for electrical grounding. (CFC 5503.6.2)
- Leaking, damaged or corroded containers are removed from service. (CFC 5503.9)

Storage

- Outdoor storage area is 15 feet or more from combustible materials such as paper, leaves, weeds, dry grass or debris. (CFC Table 5504.3.1)
- Outdoor stationary containers are located 1 foot from buildings and wall openings, 10 feet from air intakes, 5 feet from lot lines, 50 feet from places of assembly and nonambulatory patient area and as required for specific fluid stored. (CFC Table 5504.3.1)
- Outdoor stationary containers are not located in diked areas containing other hazardous material. (CFC 5504.3.1.1.3)
- Outdoor stationary containers are elevated or anchored in areas subject to flooding. (CFC 5504.3.1.1.4)
- Outdoor portable containers are located 10 feet from exits and air intakes, 1 foot from wall openings, 5 feet from lot lines and as required for specific fluid stored. (CFC Table 5504.3.1.2.1)
- Surface beneath outdoor storage is compatible with liquid stored. (CFC 5504.3.1.2.2)
- Drainage is provided and maintained at outdoor storage areas. (CFC 5504.3.1.2.3)
- Equipment, machinery and processes are UL listed and approved. (CFC 5505.1.1)
- Shut-off valves are installed at container connections and piping. (CFC 5505.1.2.3)
- Manual or automatic shut off valves are installed at outdoor container and at the point where system enters the building. (CFC 5505.3.2)
- Overfill controls are provided and maintained at stationary containers. (CFC 5505.4.3)

Additional Requirements may apply