

# Seattle Fire Department

## Permit Conditions

801-D

Site Address: \_\_\_\_\_

Inspector: \_\_\_\_\_

### Cryogenic Fluids

#### NOTICE

**This permit shall be kept on the premises designated herein at all times and shall be readily available for inspection by the fire code official. (SFC 105.3.5)**

**The fire code official shall be immediately notified by calling 9-1-1 when an unauthorized discharge of a hazardous material becomes reportable under state, federal, or local regulations, or when any release inside or outside a building could present a fire or life safety hazard. (SFC 5003.3.1)**

1. Cryogenic fluids on site shall not exceed the maximum quantities listed, and the types and locations of cryogenic fluids on site shall not differ from those specified on the face of this permit. (SFC 105.3)
2. Partially full and empty containers shall be stored in accordance with the requirements for full containers. (SFC 5501.1)
3. Containers, equipment and devices shall be in accordance with nationally recognized standards for use with cryogenic fluids. (SFC 5503.1)
4. Containers shall be provided with substantial concrete or masonry foundations, or structural steel supports on firm concrete or masonry foundations. (SFC 5503.1.3)
5. Portions of containers in contact with foundations or saddles shall be painted to protect against corrosion. (SFC 5503.1.3.2)
6. Pressure relief devices shall be located such that they are provided with ready access for inspection and repair. (SFC 5503.2.4)
7. Pressure relief devices, pressure relief vent pipes and drains in vent lines shall be arranged to discharge unobstructed to the open air in such a manner as to prevent impingement of escaping gas on personnel, containers, equipment and adjacent structures or to enter enclosed spaces.  
**Exception:** DOT-specified containers with an internal volume of 2 cubic feet or less. (SFC 5503.2.5, 5503.3.2)
8. Shutoff valves shall not be installed between pressure relief devices and containers. (SFC 5503.2.6)
9. Visible hazard identification signs in accordance with NFPA 704 shall be provided at entrances to buildings or areas where cryogenic fluids are stored, handled or used. (SFC 5503.4.1)
10. Stationary and portable containers shall be marked with the name of the gas contained. Stationary containers shall be conspicuously marked or labeled in an approved manner. Portable containers shall be identified in accordance with Compressed Gas Association (CGA) specification found in CGA C-7. (SFC 5503.4.2)
11. Stationary containers shall be identified with the manufacturing specification and maximum allowable working pressure with a permanent nameplate. (SFC 5503.4.3)

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12. Container inlet and outlet connections, liquid-level limit controls, valves and pressure gauges shall be marked with a permanent tag or label identifying their function or identified by a schematic drawing. (SFC 5503.4.4)
13. Piping systems shall be identified in accordance with ASME A13.1. (SFC 5503.4.5)
14. Emergency shutoff valves shall be identified and the location shall be clearly visible and indicated by means of a sign. (SFC 5503.4.6)
15. Containers and systems shall be secured against unauthorized entry and safeguarded in an approved manner. (SFC 5503.5.1)
16. Stationary containers shall be secured to foundations in accordance with the Seattle Building Code. (SFC 5503.5.2)
17. Portable containers subject to shifting or upset shall be secured. Nesting shall be an acceptable means if securing containers. (SFC 5503.5.2)
18. Vaporizers, heat exchangers and similar equipment shall be anchored to a foundation. (SFC 5503.5.3)
19. Containers, piping, valves, pressure relief devices, regulating equipment and other appurtenances shall be protected against physical damage and tampering. (SFC 5505.1.2.4)
20. Containers stored outside shall be adequately separated from exposure hazards in accordance with the following: (SFC 5504.3.1.1, 5504.3.1.2.1)

Exposure Hazard	Minimum separation distance Portable Containers (feet)	Minimum separation distance Stationary Containers (feet)
Building exits	10	10
Wall openings	1	1
Air intakes	10	10
Lot lines	5	5
Places of public assembly	-	50
Nonambulatory patient areas	-	50
Combustible materials such as paper, leaves, weeds, dry grass	15	15
Other hazardous materials	In accordance with Chapter 50	In accordance with Chapter 50

21. Containers shall not be used for any purpose other than to serve as a vessel for containing the product which it was designed to contain. (SFC 5503.8)
22. Leaking, damaged or corroded containers shall be removed from service. Leaking, damaged or corroded systems shall be replaced, repaired or removed in accordance with SFC Section 5503.7. (SFC 5503.9)
23. Containers and systems shall not be located where they could become part of an electrical circuit. (SFC 5503.6.1)

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24. Where required, lighting, including emergency lighting, shall be provided for fire appliances and operating facilities such as walkways, control valves and gates ancillary to stationary containers. (SFC 5503.10)
25. Outdoor stationary containers of cryogenic fluids shall not be located within diked areas containing other hazardous materials. (SFC 5504.3.1.1.3)
26. Piping systems shall be supported and protected from physical damage. Piping passing through walls shall be protected from mechanical damage. (SFC 5505.1.2.4)
27. A manual or automatic emergency shut off valve shall be provided at the supply source and at the point where the system enters the building. (SFC 5505.3.2)
28. Limit controls shall be provided to prevent overfilling of stationary containers during filling operations. (SFC 5505.4.3)
29. Where cryogenic containers are moved by hand cart, hand truck or other mobile device, such carts, trucks or devices shall be designed for the secure movement of the container. (SFC 5505.5.1)