

# Seattle Fire Department

## Permit Conditions

**801-C**

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

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

### **Corrosive liquids and solids in excess of the MAQ**

**FOR THE SPECIFIC STORAGE OR USE SITUATIONS LISTED BELOW, ADD THE PERMIT CONDITIONS AS FOLLOWS:**

#### **Indoor Storage of Quantities over Maximum Allowable Quantities**

1. Indoor storage of corrosive liquids and solids in quantities in excess of maximum allowable quantities per control area as indicated in SFC Table 5003.1.1(2) shall be confined to an approved room or area constructed in accordance with the Seattle Building Code for a Group H, Division 4 Occupancy. [SFC 5404.1]
2. Indoor storage areas and storage buildings shall be provided with mechanical exhaust ventilation or natural ventilation where natural ventilation can be shown to be acceptable for the materials as stored. Exhaust ventilation systems shall comply with all of the following:
  - a. Installation shall be in accordance with the Seattle Mechanical Code.
  - b. Mechanical ventilation shall be at a rate of not less than 1 cubic foot per minute per square foot of floor area over the storage area.
  - c. Systems shall operate continuously unless alternative designs are approved.
  - d. A manual shutoff control shall be provided outside of the room in a position adjacent to the access door to the room or in an approved location. The switch shall be a break-glass or other approved type and shall be labeled: VENTILATION SYSTEM EMERGENCY SHUTOFF.
  - e. Exhaust ventilation shall be designed to consider the density of the potential fumes or vapors released. For fumes or vapors that are heavier than air, exhaust shall be taken from a point within 12 inches of the floor. For fumes or vapors that are lighter than air, exhaust shall be taken from a point within 12 inches of the highest point of the room.
  - f. The location of both the exhaust and inlet air openings shall be designed to provide air movement across all portions of the floor or room to prevent the accumulation of vapors.
  - g. Exhaust air shall not be recirculated to occupied areas if the materials stored are capable of emitting hazardous vapors and contaminants have not been removed. Air contaminated with explosive or flammable vapors, fumes or dusts; flammable, highly toxic or toxic gases; or radioactive materials shall not be recirculated. [SFC 5004.3 and 5004.3.1]

#### **Outdoor Storage and Use of Quantities over Maximum Allowable Quantities:**

1. Outdoor storage and outdoor use of corrosive materials of amounts that exceed the MAQ's per control area per SFC Table 5003.1.1 (4) shall not be within 20 feet of buildings, lot lines, public alleys, public ways or means of egress. A two-hour fire barrier, without openings or penetrations, extending not less than 30 inches above and to the sides of the storage area is allowed in lieu of such distance. [SFC 5404.2.2]
2. The area surrounding an outdoor storage area or tank shall be kept clear of combustible materials and vegetation for a minimum distance of 25 feet. [SFC 5004.11]
3. Above-ground outside storage tanks exceeding an aggregate quantity of 1,000 gallons of corrosive liquids shall be provided with secondary containment. [SFC 5404.2.1]

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#### Retail and Wholesale Storage Requirements:

1. Individual container size shall not exceed 100 pounds for solids or 10 gallons capacity for liquids in storage and display areas. [SFC 5003.11.3.6]
2. Storage and display height shall not exceed 6 feet above the finished floor in display areas of Group M Occupancies. Storage height shall not exceed 8 feet above the finished floor in storage areas of Group M and Group S occupancies. [SFC 5003.11.3.2]
3. Individual containers less than 5 gallons or less than 25 pounds shall be stored or displayed on pallets, racks, or shelves. [SFC 5003.11.3.3]
4. Aisles 4 feet in width shall be maintained on three sides of the storage or display area. [SFC 5003.11.3.9]
5. Storage and display of solids shall not exceed 200 pounds per square foot of floor area actually occupied by solid merchandise. [SFC 5003.11.3.1]
6. Storage and display of liquids shall not exceed 20 gallons per square foot of floor area actually occupied by liquid merchandise. [SFC 5003.11.3.1]
7. Shelving shall be of substantial construction and shall be braced in accordance with the Seattle Building Code. [SFC 5003.9.9, 5003.11.3.4]
8. Shelf storage shall be maintained in an orderly manner. [5003.9.9]

#### Requirements for Use of Liquids and Solids in Quantities Exceeding Exempt Amounts:

1. Where liquids or solids having a hazard ranking of 3 or 4 in accordance with NFPA 704 are in open containers or systems and dispensed or used, mechanical exhaust ventilation shall be provided to capture gases, fumes, mists or vapors at the point of generation.  
**Exception:** Liquids or solids that can be demonstrated not to create harmful gases, fumes, mists or vapors. [SFC 5005.2.1.1]
2. Liquids having a hazard ranking of 3 or 4 in accordance with NFPA 704 shall be transferred by one of the following methods:
  - From safety cans complying with UL 30.
  - Through an approved closed-piping system.
  - From containers or tanks by an approved pump taking suction through an opening in the top of the container or tank.
  - From containers or tanks by gravity through an approved self-closing or automatic-closing valve where the container or tank and dispensing operations are provided with approved spill control and secondary containment in accordance with SFC Section 5004.2.
  - Approved engineered liquid transfer systems

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**Exceptions:** 1. Liquids having a hazard ranking of 4 when dispensed from approved containers not exceeding 1.3 -gallon (4 L).  
2. Liquids having a hazard ranking of 3 when dispensed from approved containers not exceeding 5.3 gallons (20L). [SFC 5005.1.10]

3. Secondary containment is required for indoor or outdoor dispensing of corrosive materials in open containers or open systems when the individual vessel or open system is greater than 1.3 gallons (5 L) or multiple vessel or open system is greater than 5.3 gallons (20 L). [SFC 5005.2.1.4, 5005.3.5]
4. Secondary containment is required for indoor or outdoor dispensing of corrosive materials in closed containers or closed systems when the individual vessel or open system is greater than 55 gallons (208 L) or multiple vessel or open system is greater than 1000 gallons (3785 L). [SFC 5005.2.2.4, 5005.3.7]
5. Visible hazard identification signs as specified in NFPA 704 for Corrosive materials shall be placed on stationary containers and above ground tanks and at entrances to locations where Corrosive materials are stored, dispensed, used or handled. [SFC 5003.5]