

Hazardous Material Storage Secondary Containment Guidelines

Department: Chemical and General Safety

Program: Hazardous Materials Program

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Authority: ES&H Manual, Chapter 40, Chemical Safety

Content from Unidocs Secondary Containment Guidelines for Hazardous Material Storage (<http://www.unidocs.org/hazmat/aboveground/un-hazmatsecondary.pdf>)

Secondary containment is required for the storage of all regulated hazardous materials.

CONTAINMENT VOLUME Secondary containment for a single container (tank) will be 110% of the primary container. Secondary containment for multiple containers will be, 150% of the largest container's volume OR 10% of the aggregate volumes of all containers, which is greater. All secondary containment systems open to rainfall must be able to hold 4.5 inches of rainfall in addition to the required secondary containment volume. All secondary containment systems open to fire sprinkler discharge must be able to hold the discharge from all sprinkler heads over the secondary containment system for 20 minutes in addition to the required secondary containment volume.

CONTAINMENT CONSTRUCTION Secondary containment must be constructed using materials capable of containing a spill or leak for at least as long as the period between monitoring inspections.

OVERFILL PROTECTION A means of providing overfill protection for any primary container may be required. This may be an overfill prevention device and/or an attention getting high level alarm.

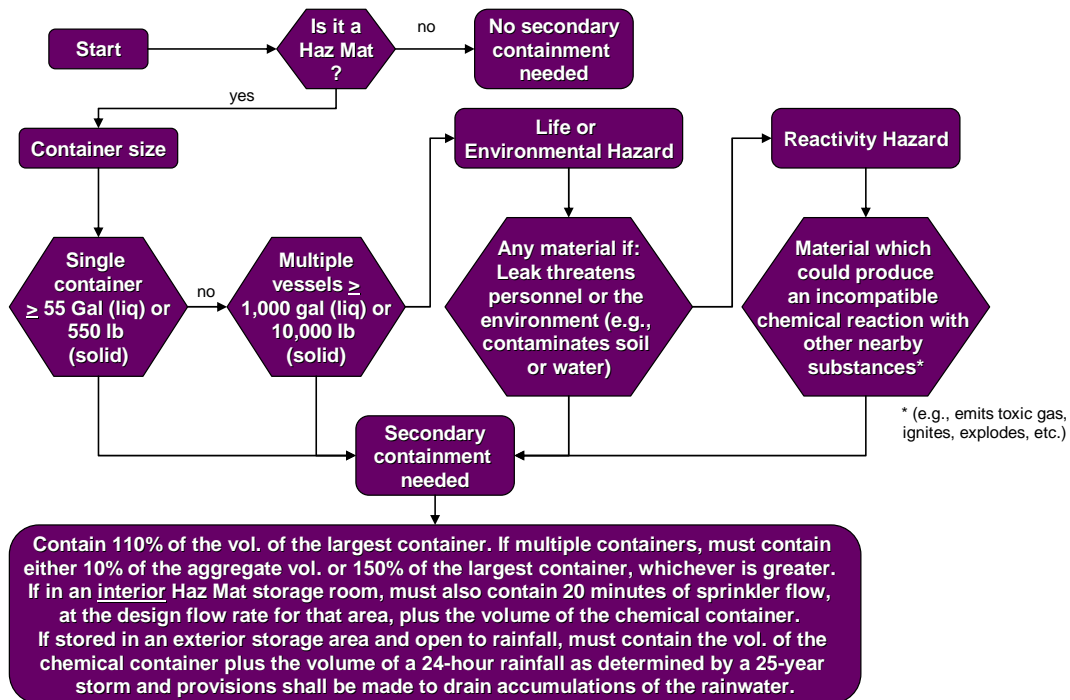
SEPARATION OF MATERIALS Materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of a primary or secondary container shall be separated in both the primary and secondary containment so as to avoid intermixing.

CONTAINMENT DRAINAGE Uncontrolled drainage from a secondary containment system is not allowed. Accumulated rainwater or sprinkler flow water may only be released from a secondary containment system after it has been determined to be uncontaminated. The drainage system must be kept closed or pumps turned off unless the drainage process is monitored.

OTHER REQUIREMENTS & SUGGESTIONS All storage areas must be secured to prevent access by unauthorized personnel. Secondary containment systems may be covered to prevent rainfall from entering. Constructed secondary containment systems, i.e., poured pads with berms, must be tested to assure that they are leak tight.

Approved coatings must be applied to secondary containment surfaces when spills or leaks would damage or penetrate the uncoated secondary containment system. Secondary containment systems can be provided through the use of trays or drums placed in over-pack drums as long as all provisions of the secondary containment requirements are met.

Secondary Containment Decision Process



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Secondary Containment Design



Example: 3 x 55-gal drums of hazardous materials. Largest container = 55-gal.
 -150% of largest container = 82.5 gal
 -10% of aggregate volume = 16.5 gal
 -Therefore, secondary containment should be 82.5 gal
 -ex: 72" x 36" x 8" tray would provide volume



Example: 10 x 5-gal + 30 x 1-gal bottles.
 Largest container = 5-gal.
 -150% of largest container = 7.5 gal
 -10% of aggregate volume = 8 gal
 -Therefore, secondary containment should be 8 gal