The National Park Service
EnviroFact Sheet

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Managing Hazardous Materials (SY-2)

DRAFT

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Stored hazardous materials are found at most NPS facilities. They include, but are not limited to fuels, paints, cleaning solvents, water treatment agents, compressed gases, fuel-gas mixtures for welding/ cutting/brazing, copy toner, and laboratory chemicals.

While "hazardous materials" include a broad range of materials, this EnviroFact Sheet primarily addresses storage requirements for:

- Flammable and combustible liquid; and
- Compressed gases.

NPS facilities must use proper storage techniques to minimize the potential for emergencies such as fire, explosions, personal exposures, hazardous reactions, contact of incompatible materials and accidental spills.

Proper storage methods also help to minimize an emergency's impact by limiting a fire's extent, containing hazardous reactions, venting potential explosions, and minimizing a spill's extent.

NPS recommends that parks use flammable storage rooms, buildings, or cabinets to store hazardous materials in an operating area when the amount of these chemicals exceeds 10 gallons.

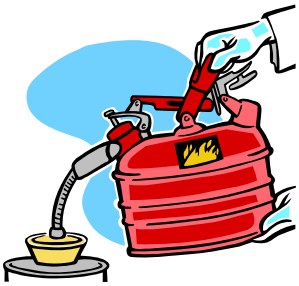
FOR MORE INFO…

Information on OSHA organization and programs:
http://www.osha.gov/

EPA Solvent Substitution Data Systems:
http://es.epa.gov/ssds/ssds.html

APPLICABLE REGULATIONS

The Occupational Safety and Health Administration's (OSHA) regulates the handling of hazardous materials (i.e., compressed gases, flammable and combustible liquids) and container labeling. OSHA also regulates how hazardous materials containers should be managed and stored. The hazardous material storage regulations can be found at 29 CFR 1910.



Most state and local jurisdictions address hazardous material storage through the use of building codes, which can include BOCA (Building Officials and Code Administrator) Codes, NFPA (National Fire Protection Association) Codes, or UBCs (Uniform Building Codes).

CONTAINER MANAGMENT

The following requirements are applicable to container and portable tank storage (29 CFR 1910.106(d)):

- All chemical storage areas must be protected from weather elements.
- Aisles must be kept clear of obstruction, have adequate lighting provided, and have good housekeeping practiced at all times.
- Incompatible chemicals should be stored separately. Examples of incompatible materials include alkaline cleaners and battery acid, fertilizer and dormant oil, chlorine and caustic chemicals.
- For materials that are capable of exploding, appropriate explosion venting must be provided (e.g., blow-out doors or walls).
- Waste chemicals should be stored separately from usable chemical products.
- Chemical storage areas should be graded or curbed to contain spills.

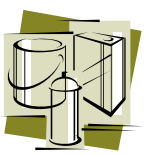
Cabinets storing flammable and combustible liquids must be fire resistant, and designed and constructed to limit the internal temperature. Cabinets must be labeled in conspicuous lettering, "Flammable—Keep Fire Away." In addition, unusual hazardous materials such as unknown chemicals and very old materials can be extremely hazardous if the hazard potential is not known. See 29 CFR 1910.106(d)(3).

Compressed gas cylinders also pose a hazard. Gas cylinders should be stored with compatible materials and in a manner that ensures the cylinder is secured against tipping. See 29 CFR 1910.101.

KEY PRECAUTIONS

- Staff should only handle hazardous materials after they have received Hazard Communication Training specific to that material (see EnviroFact Sheet - "Hazard Communication (SY-1)").
- When in doubt, **do not** handle the material; call an NPS or outside expert on hazardous materials.
- Secure the area from public access and the material from inadvertent damage.
- For potentially explosive materials such as old chemicals, obtain bomb disposal assistance from the local municipal bomb squad, National Guard, or active/reserve military explosive ordinance disposal personnel.

POLLUTION PREVENTION



When addressing compliance issues regarding hazardous material storage, consider how hazards can be reduced or eliminated. For example, two significant sources of hazardous materials at parks are paints and cleaning products. Whenever possible, choose less hazardous products, such as latex instead of oil-based paints and choose citrus-based cleaners instead of naphtha solvents. For more information, see the Solvent Alternatives Guide (SAGE) or the Integrated Solvent Substitution Data System (ISSDS) available on EPA's Solvent Substitute Data Systems web page.

HAZARDOUS MATERIALS STORAGE COMPLIANCE CHECKLIST	
Checklist Item	**Notes**
1. When evaluating hazardous material storage compliance, determine if opportunities exist to substitute hazardous materials with non-hazardous, unregulated substances.	
2. Ensure that the amount of flammable and combustible liquids, stored in the immediate area in which they will be used, is limited to that which will be needed for: • Operation of office equipment, • Maintenance, or • Lab work.	
3. Ensure that flammables and incompatible corrosives (acids and bases) are separated and isolated from other materials in a flammable storage cabinet. At a minimum, ensure that no more than a total of 10 gallons of Class I or Class II liquids is stored outside a safety storage cabinet	
4. Ensure that cabinets storing flammable and combustible liquids are fire resistant and labeled in conspicuous lettering, “Flammable—Keep Fire Away.”	
5. Ensure that “No Smoking” signs are posted in areas where flammable and combustible liquids are stored.	
6. Ensure that buildings specifically used for storage of flammables meet the following requirements: • Construction is with two-hour fire resistive materials; • Doors are positive-latched with self-closing devices and are at least 1.5-hour fire resistive; • Ventilation is provided at the rate of one cubic foot per hour per square foot of floor space, and exhaust ducts are within 12 inches of the floor; • Switches controlling ventilation system components are located outside the room; • Electrical wiring and fixtures are appropriate for the liquids present; and • Appropriate explosion venting means are provided for materials that are capable of exploding.	
7. Ensure that oxygen cylinders are: • Not stored near highly combustible material, especially oil and grease; • Not stored near reserve stocks of carbide and acetylene or other fuel-gas cylinders; • Not stored near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment; and • Separated from fuel-gas cylinders or combustible materials by a minimum distance of 20 ft (6.1 m) or by a noncombustible barrier at least 5 ft (1.5 m) high having a fire-resistance rating of at least one-half hour (this does not apply to cutting torch fuels that are actively being used).	
8. Ensure that compressed gas cylinders are chained to prevent them from tipping over, and capped when not in use.	