
STANDARD OPERATING PROCEDURE FOR FLAMMABLE MATERIALS

I. POTENTIAL HAZARDS:

Flammability. Check Safety Data Sheet (SDS) of the material for other hazards and follow appropriate SOPs.

Definitions –

- Flammable gas – a gas that, at 68°F or less and standard pressure, forms a flammable mixture with air at a concentration of 13% by volume or less OR that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit.
- Flammable liquid – a liquid having a flash point below 100°F.
- Flammable solid – a solid, other than a blasting agent or explosive, that (1) has an ignition temperature below 212°F, or (2) is capable of causing a fire through friction, absorption of moisture, or spontaneous chemical change, or (3) burns so vigorously and persistently as to create a serious hazard.
- Combustible liquid – a liquid having a flash point at or above 100°F (definition listed for storage considerations).

II. ENGINEERING CONTROLS:

Work in a chemical fume hood if air concentrations above 10% of the lower flammable limit may be reached, if the chemical is irritating to the eyes and respiratory system, and/or is toxic by inhalation.

III. WORK PRACTICE CONTROLS:

- Know the location of the nearest fire extinguisher before beginning work.
- Use in the smallest practical quantities for the experiment being performed.
- Avoid using ignition sources (Bunsen burners, hot plates, electrical equipment with frayed or cracked wiring, etc.) and/or creating static electricity in areas where highly flammable chemicals are used.
- Ensure proper grounding. Be sure to ground metal containers when transferring flammable liquids.
- Keep containers of flammable chemicals closed at all times when not in use to prevent accumulation of flammable vapor concentrations.

IV. PERSONAL PROTECTIVE EQUIPMENT (PPE):

- Chemical splash goggles (over prescription glasses),
- Apron,
- Pants or skirts that extend to below the knee,

- Shoes that completely cover the feet,
- Clothing made of natural fibers..

V. TRANSPORTATION AND STORAGE:

- Flammable chemicals should be stored in appropriate areas within the laboratory and away from any potentially incompatible materials.
- Transport flammables in secondary containment, preferably a polyethylene or other non-reactive acid/solvent bottle carrier.
- Suitable fire control devices (such as fire extinguishers) must be available at locations where flammable or combustible liquids are stored.
- Open flames shall not be permitted in flammable liquid storage areas. A “No Open Flames” sign must be conspicuously posted in these areas.
- Flammable and combustible liquids must not be stored in a manner that hinders safe egress.
- All flammable storage cabinets must meet NFPA 30 requirements.
- Secondary containment is recommended for liquids.
- Avoid storing on the floor.

VI. WASTE DISPOSAL

- Handle and store flammable wastes following the guidelines above while accumulating wastes and awaiting chemical waste pickup. Waste must be disposed of following Columbia State’s Hazardous Waste Policy 06-04-00. Contact the director of Facility Services and Safety for assistance for determining appropriate methods for disposal.