
Flammable Liquid Storage Cabinet Inspection

1.0 Objective & Intent

The objective of this Standard Operating Procedure (SOP) is to establish a mandatory, repeatable inspection protocol for all flammable liquid storage cabinets within the facility. This procedure is designed to mitigate the risk of fire, explosion, and chemical exposure associated with improper storage of flammable and combustible liquids, in full compliance with WorkSafeBC regulations (OHS Regulation Part 5: Chemical Agents and Biological Agents) and the National Fire Code of Canada.

Failure to properly inspect and maintain flammable liquid storage cabinets can lead to catastrophic events including flash fires, pool fires, and toxic vapor releases. This SOP ensures that all cabinets are structurally sound, properly labeled, and free from leaks or incompatible storage, thereby protecting personnel, property, and the environment.

2.0 Operational Scope

This procedure applies to all flammable liquid storage cabinets located within the cabinet and millwork manufacturing facility, including but not limited to the finishing department, maintenance shop, and any satellite storage areas. It covers all cabinets used for storing Class I, II, and III flammable and combustible liquids (e.g., solvents, thinners, stains, lacquers, adhesives, and cleaning agents).

Personnel required to perform this inspection include the Plant Safety Officer, designated maintenance personnel, and any trained workers authorized by the Safety Officer. This inspection must be conducted on a weekly basis, with additional inspections following any spill, cabinet relocation, or suspected damage.

3.0 Hazard Identification & Mandatory PPE

- Fire and Explosion: Flammable vapors can ignite from static discharge, electrical sparks, or open flames. Ensure no ignition sources are present within 3 meters of the cabinet.
- Chemical Exposure: Skin contact or inhalation of flammable liquid vapors can cause irritation, dermatitis, or central nervous system depression. Avoid direct contact with any spilled liquids.
- Physical Injury: Heavy containers or cabinet doors may cause pinch points or crush injuries. Use proper lifting techniques and keep hands clear of hinges.
- Slip/Trip Hazards: Spilled liquids on the floor create slip hazards. Immediately clean up any spills and place warning signs.
- CSA-Approved Safety Glasses with side shields (mandatory when inspecting or handling containers)
- Nitrile or Neoprene Chemical-Resistant Gloves (rated for the specific solvents in use)
- CSA-Approved Steel Toed Boots (mandatory in all production areas)
- Flame-Resistant (FR) Coveralls or Lab Coat (recommended when handling large volumes)

4.0 Required Safety Equipment & Tools

- Flammable Liquid Storage Cabinet Inspection Checklist (printed or digital via SafeDesk)
- Flashlight (for inspecting interior corners and under shelves)
- Spill Kit (absorbent pads, socks, and disposal bags – must be located within 10 meters of the cabinet)
- Class B Fire Extinguisher (rated for flammable liquids – verify location and inspection tag)

- Leak Detection Dye or UV Light (optional, for identifying small leaks in containers)
- Non-Sparking Tools (e.g., brass or plastic wrench for opening bungs – if required)
- Personal Lockout/Tagout (LOTO) Kit (only if cabinet is part of a ventilation system that requires isolation)

5.0 Step-by-Step Safety Procedure

1. Notify all affected personnel in the area that a flammable liquid cabinet inspection is in progress. Post a temporary warning sign if necessary to prevent unauthorized access or use of the cabinet during inspection.
2. Don all required PPE as listed in Section 3.0. Verify that your chemical-resistant gloves are free of tears or pinholes and that your safety glasses are clean and properly fitted.
3. Visually inspect the exterior of the cabinet for any signs of damage, corrosion, or leaks. Check the cabinet's legs, seams, and door hinges. Ensure the cabinet is level and stable on the floor. Verify that the cabinet is grounded and bonded if required by local code.
4. Open the cabinet doors slowly and inspect the interior. Look for any signs of liquid leakage on shelves, the bottom pan, or container exteriors. Check for rust, dents, or cracks in the cabinet walls. Ensure the self-closing door mechanism (if equipped) functions properly and that the door latch is secure.
5. Examine all containers stored inside the cabinet. Verify that each container is properly labeled with the chemical name and hazard warnings. Ensure all lids or caps are tightly sealed. Remove any containers that are damaged, leaking, or unlabeled and place them in a designated overpack drum or secondary containment for proper disposal.
6. Check that the cabinet is not overloaded. The total quantity of flammable liquids stored must not exceed the manufacturer's rated capacity (typically 60 gallons for a standard cabinet). Ensure that no incompatible materials (e.g., oxidizers, corrosives) are stored inside the same cabinet unless approved by the Safety Officer.
7. Inspect the cabinet's ventilation openings (if present) to ensure they are unobstructed and clean. Verify that the fusible link on the self-closing door mechanism (if equipped) is intact and not damaged. Check that the cabinet's grounding wire (if present) is securely attached to a verified ground point.
8. Verify that the required safety equipment is present and accessible. Locate the nearest Class B fire extinguisher and confirm its inspection tag is current. Ensure the spill kit is fully stocked and within the required distance. Check that the area around the cabinet is clear of combustible materials (e.g., cardboard, rags, sawdust) for at least 1 meter in all directions.
9. Document all findings on the Flammable Liquid Storage Cabinet Inspection Checklist. Record the cabinet ID, date, inspector name, and any deficiencies found. For any deficiencies (e.g., leak, damaged container, missing label), initiate a corrective action work order immediately. If a leak or spill is discovered, follow the facility's Spill Response Procedure before continuing.
10. Close the cabinet doors securely and remove any temporary warning signs. Report the inspection results to the Plant Safety Officer and file the completed checklist in the safety records binder or upload it to SafeDesk for digital tracking. Schedule a follow-up inspection if any corrective actions were noted.

Regulatory Disclaimer: This document is a generic safety template provided for educational and informational purposes only. It does not constitute professional engineering, legal, or regulatory compliance advice. The end-user assumes all liability for validating all safety protocols against specific machinery manufacturer manuals and local occupational health and safety regulations (e.g., WorkSafeBC, CSA standards) before deployment.