



Chemical Storage Guidelines

General Requirements

- Note some items on this list will fit into 2 or more classes, leading to further segregation. For instance a caustic solution that is also an oxidizer would be separated from the other caustics.
- Unless otherwise specified, materials should be stored on shelves with a small lip to help prevent bottles from falling and breaking/spilling.
- Flammable and combustible liquids should be in flammable storage cabinets as much as possible, but in the event of space issues, preference should be given to flammables.

Chemical Type	WHMIS Class	Examples	Storage Recommendations
Flammable liquids – Flash Point <37.4°C	B2	<ul style="list-style-type: none">• Toluene• Ethanol• Carbon Disulphide (CS₂)	<ul style="list-style-type: none">• Keep in a sealed or metal pipe ventilated, Fire Code approved, flammable storage cabinet• Keep away from oxidizing materials and acids/bases.
Combustible liquids – Flash Point >37.4°C	B3	<ul style="list-style-type: none">• Mineral spirits• Ethylene glycol monobutyl ether (EB)	<ul style="list-style-type: none">• Recommended to be stored in the same way as flammables.
Caustic Solids	E	<ul style="list-style-type: none">• Potassium hydroxide• Sodium hydroxide	<ul style="list-style-type: none">• Dry cabinet• Away from acids
Basic/caustic Solutions	E	<ul style="list-style-type: none">• Sodium hydroxide/water	<ul style="list-style-type: none">• Cabinet with separate drip pan from acids etc.
Inorganic Acids	E	<ul style="list-style-type: none">• Nitric acid• Phosphoric acid• Sulfuric acid• Hydrofluoric acid (HF_(aq))	<ul style="list-style-type: none">• Store in cabinet of non-combustible material – dedicated acid storage recommended• Use plastic secondary containment to contain spills• Separate acids into groups - mineral acids, oxidizing acids, special acids (e.g. perc, HF)• Separate Perchloric acid from all other acids using non- reactive bins such as glass or equivalent• Keep separate from caustic solids and solutions• HF - see HF protocol



Chemical Type	WHMIS Class	Examples	Storage Requirements
Organic Acids	E, various	<ul style="list-style-type: none">• Glacial acetic acid	<ul style="list-style-type: none">• On shelf in secondary containment, separate from other groups.
Odourous volatile substances	various	<ul style="list-style-type: none">• Perchloro-ethylene• Mercaptans	<ul style="list-style-type: none">• Can be stored with flammable liquids to reduce odours
Water Reactives	F	<ul style="list-style-type: none">• Sodium• Potassium	<ul style="list-style-type: none">• In cabinet, typically under inert blanket.• Cabinet should withstand water spray in case of fire requiring water suppression
Air Reactives	F	<ul style="list-style-type: none">• T-butyl lithium• Lithium aluminum hydride	<ul style="list-style-type: none">• Store in inert atmosphere away from all other groups.• Follow supplier's specific storage instructions
Oxidizers	C	<ul style="list-style-type: none">• Sodium hypochlorite• Benzoyl peroxide• Potassium permanganate	<ul style="list-style-type: none">• Store in cabinet of non-combustible material• Separate from flammable and combustible materials
Reducing agents	C	<ul style="list-style-type: none">• Oxalic acid• Sodium borohydride• Tin II chloride• Phosphorous acid	<ul style="list-style-type: none">• Store away from oxidizers and flammables/combustibles in non-combustible cabinet
Toxic Gasses	D1A	<ul style="list-style-type: none">• Hydrogen sulphide• Phosgene• Sulphur dioxide• Arsine	<ul style="list-style-type: none">• Dedicated ventilated cabinet if concentration is sufficient.• Example – 25ppm CO in N2 does not need ventilated cabinet.
Inert Solids	various	<ul style="list-style-type: none">• Sodium Chloride• KNO₃	<ul style="list-style-type: none">• Shelving/cabinets with edge guards