Chemical Storage Segregation Guidelines

Western University of Health Sciences | Environmental Health & Safety

In order to store chemicals properly, they must be segregated based on the associated hazard. Never store chemicals alphabetically until they have been segregated by hazard class. With all chemicals: Check the SDS (Section 7: Handling and Storage, Section 10: Stability and Reactivity) for specific storage requirements. Label all storage areas with the hazard present. Use secondary containment whenever possible for hazardous chemicals, and is required for all waste. Secondary containers should be large enough to contain 110% of the largest container. For assistance with chemical storage questions, contact ehs@westernu.edu.

Cat.	GHS Symbol	Chemical Hazard	Examples	Storage	Store away from
Compressed Gas		**Flammable**	Methane Acetylene Propane	• Cool, dry area • 20 ft. away from oxidizing gases or separated by 5 ft. high wall with 0.5hr fire resistance • Secure cylinders upright with two chains/straps	Oxidizing gases Toxic gases Oxidizing solids
		Oxidizing	Oxygen Chlorine Fluorine mixtures	• Cool, dry area • 20 ft. away from flammable gases or separated by 5 ft. high wall with 0.5hr fire resistance • Secure cylinders upright with two chains/straps	Flammable Gases
		Poisonous	Carbon monoxide Hydrogen sulfide	• Cool, dry area • Away from flammable gases and liquids • Secure cylinders upright with two chains/straps	Flammable Gases Oxidizing Gases
Corrosives		**Inorganic Acids**	Hydrochloric acid Sulfuric acid Phosphoric acid	• Separate acid storage cabinet • Use a chemically resistant secondary container • Metal shelves not recommended due to corrosion	Flammables Bases Oxidizers Organic acids
		Organic Acids	Acetic Acid Trichloroacetic acid Lactic acid	• Separate acid storage cabinet • Use a chemically resistant secondary container • Metal shelves not recommended due to corrosion	Flammables Bases Oxidizers Inorganic acids
		Oxidizing Acids	Nitric Acid Perchloric acid Chromic acid	• Separate acid storage cabinet • Use a chemically resistant secondary container • Away from flammables and other acid types • Metal shelves not recommended due to corrosion	Flammables Inorganic acids Organic acids Bases
		Bases	Ammonium hydroxide Potassium hydroxide Sodium hydroxide	• Storage cabinet separate from all acids • Use a chemically resistant secondary container	Flammable liquids Oxidizers Poisons Acids
Reactives		**Explosives**	Picric acid (dry) Tri-nitro compounds Heavy metal azides	• Secure location • Away from all other chemicals • Protect from falls, impacts, and shocks • Contact EH&S for specific guidelines	All other chemicals
		**Flammable Liquids**	Acetic Acid Acetone Benzene Methanol	• Acetic Acid: Use a chemically resistant secondary container • Flammable storage cabinet • Separate, dry, cool area • Away from oxidizers and corrosives • Peroxide forming chemicals must be dated when opened	Acids/Bases Oxidizers Poisons
		Flammable Solids	Phosphorous Carbon Charcoal		
		**Oxidizers**	Hydrogen peroxide Potassium dichromate Halogens Nitrate compounds	• Non-combustible cabinet • Use a chemically resistant secondary container • Away from flammables	Reducing agents Flammables Organic materials
	No GHS symbol	**Water Reactive Chemicals**	Sodium metal Potassium metal Lithium Metal	• Dry, cool location • Use a chemically resistant secondary container • Label location "water reactive"	All aqueous solutions Oxidizers
Other		**Poisons**	Cyanides Heavy metal compound Sodium Azide	• Cool, dry area • Well ventilated area • Use a chemically resistant secondary container **Sodium Azide** • Will react with metals such as silver, gold, lead, copper, brass, or solder in plumbing systems, to produce explosive metal azides. **Sodium Azide** • Contact with acids produces highly toxic gas – hydrazoic acid.	Flammables Corrosives Check Sections 7 & 10 of SDS
		**Skin/Eye Irritants Acute Toxicity Narcotic Effects Respiratory Tract Irritants**	Tris Base Dichloromethane Polyvinylpyrrolidone		
		**Carcinogens Mutagens Respiratory Sensitizers Target Organ Toxicity Aspiration Toxicity**	Acrylamide Chloroform Formaldehyde	• Secure location, limit access to only trained users • Use a chemically resistant secondary container • Store separate from flammable and corrosive materials to avoid damage to container	Flammables Corrosives Check Sections 7 & 10 of SDS