UNIVERSITY OF NEW ENGLAND

CHEMICAL SEGREGATION and STORAGE CHART

CLASS OF CHEMICALS	CHEMICAL EXAMPLES	RECOMMENED STORAGE METHOD	INCOMPATIBLES SEE SDS IN ALL CASES	PROPERTIES
Compressed Gases -Flammable	Methane, Acetylene, Propane	Store in a cool, dry area, away from oxidizing gases. Securely strap or chain cylinders to a wall or bench top.	Oxidizing and toxic compressed gases, oxidizing solids.	Since gas inside is stored at high pressure the cylinder can become a missile if valve is broken. Most are heavier than air and may collect in low areas without proper ventilation.
Compressed Gases -Oxidizing	Oxygen, Chlorine, Bromine	Store in a cool, dry area, away from flammable gases and liquids. Securely strap or chain cylinders to a wall or bench top.	Flammable gases.	React violently and rapidly with combustible materials.
Compressed Gases -Poisonous	Carbon monoxide, Hydrogen sulfide	Store in a cool, dry area, away from flammable gases and liquids. Securely strap or chain cylinders to wall or bench top.	Flammable and/or oxidizing gases.	Gas at 20°C or less, and known to be toxic and hazardous.
Corrosives – Acids INORGANIC	Inorganic (mineral) acids – Hydrochloric acid, Sulfuric acid, Chromic acid, Nitric acid, Phosphoric acid, Perchloric acid	Store in a separate, lined/protected acid storage cabinet. *DO NOT store acids *on metal shelves**	Flammable liquids, flammable solids, bases and oxidizers. **Organic acids.**	pH ≤ 2 burns eyes and skin.
Corrosives – Acids ORGANIC	Organic acids – Acetic acid, Trichloroacetic acid, Formic acid, Acetic Anhydride	Store in a separate, lined/protected acid storage cabinet. *DO NOT store acids *on metal shelves**	Flammable liquids, flammable solids, bases, and oxidizers. **Inorganic acids.**	pH ≤ 2 burns eyes and skin.
Corrosives - Bases	Ammonium hydroxide, Potassium hydroxide, Sodium hydroxide	Store in separate storage cabinet.	Flammable liquids, oxidizers, poisons, and acids.	pH ≥ 12.5 burns eyes and skin.

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Flammable Liquids And Combustible Liquids	<u>All Acohols:</u> butanol, ethanol, methanol, isopropanol, etc. Acetone, Acetaldehyde, Acetonitrile, benzene cyclohexane, diethy ether, dioxane, ethyl Acetate, hexane, hydrazine, pyridine, all silanes, tetrahydrofuran, toluene, xylene.	Store in a flammable storage cabinet. **Peroxide forming chemicals must be dated upon opening e.g. Ether Tetrohydrofuran** No cardboard shipping boxes in cabinet. Never store in cold rooms or refrigerators (unless refrigerator is explosion proof)	Acids, bases, oxidizers, and poisons.	Flammable liquids have a flashpoint (FP) below 100°F (38°C). Flashpoint is the lowest temperature at which a liquid gives off enough vapor to ignite. Combustible liquids have a flash point about 100°F and below 140°F
Flammable Solids	White or red phosphorus, Carbon, Charcoal, metal powders.	Store in a separate dry cool area away from oxidizers, corrosives.	Acids, bases, oxidizers, and poisons.	Class I explosives when dry sufficiently wetted with water or alcohol explosive properties suppressed. (Picric Acid) Fine dust that can form explosive mixtures with air or explosion hazard when heated. (Metal powders) Pyrophoric (white phosphorus) Can be ignited by friction.
Water Reactive Chemicals	Sodium metal, Potassium metal, Lithium metal, Lithium Aluminum hydride	Store in a dry, cool location. Protect from water and the fire sprinkler system, if applicable. Label location – WATER REACTIVE CHEMICALS	Separate from all aqueous solutions, and oxidizers.	Reacts with water to produce highly flammable hydrogen gas.
Oxidizers	Sodium hypochorite, Benzoyl peroxide, Potassium permanganate, Potassium chlorate, Potassium dichromate. The following are generally considered oxidizing substances: Peroxides, Perchlorates, Chlorates, Nitrates, Bromates, Superoxides	Store in a spill tray inside a non-combustible cabinet, separate from flammable, combustible materials, and all organic materials.	Separate from reducing agents, flammables, and combustibles and organic materials.	Oxidizers are generally not combustible, but they may cause or contribute to combustion by yielding oxygen when in contact with flammable material or strong reducing agents.

CLASS OF CHEMICALS	**CHEMICAL EXAMPLES**	**RECOMMENED STORAGE METHOD**	**INCOMPATIBLES SEE SDS IN ALL CASES**	**PROPERTIES**
Poisons/Toxic	Cyanides, heavy metal compounds, i.e. Cadmium, Mercury, Osmium	Store separately in a vented, cool, dry area in chemically resistant secondary containers.	Flammable liquids, acids, bases, and oxidizers.	Cyanides and sulfides will produce poisonous hydrogen cyanide or hydrogen sulfide gas when in contact with acids.
Volatile and Non-Volatile Toxic Liquids	Volatile toxics Carbon, tetrachloride, chloroform, dimethyl sulfate, halothane, mercaptoethanol, methylene, chloride (dichlormethane), phenol. Non-volatile toxics Acrylamide solutions, ethidium bromide, triethanolamine.	Ok to store with flammables. Alternative: Any enclosed cabinet of shelf to protect from accidental breakage.	Bases, water reactives	Chronic exposure is a health hazard. Avoid inhalation and skin contact. Many toxic solvents are highly volatile. Non-flammable (some are combustible)
General Chemicals -Non-Reactive	Agar, Sodium Chloride, Sodium bicarbonate, and most non-reactive salts	Store on general laboratory benches or shelving.	See SDS	