

# UVM Hazardous Chemicals of Concern

This list of the hazardous chemicals most commonly used in UVM laboratories provides the appropriate storage and hazard classes for those chemicals. This list also provides information about:

1. Chemicals which are considered **Acutely Toxic by the EPA**. Remember that only 1 liter of these chemicals may be stored as waste in the laboratory at a time;
2. Chemicals for which medical monitoring procedures are available (marked *med mon* or *OSHA med mon* if OSHA requires monitoring for exposures over the action level);
3. Chemicals which have time sensitive storage considerations - these are chemicals which are likely to become reactive over time.

**Note:** This list is not all inclusive. If you are working with a chemical that you believe warrants care in use, please use the Chemical Use Planning Form for that material as well.

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## 01 - Inorganic Acids

Boron trichloride  
Hydriodic Acid  
Hydrobromic Acid  
Hydrochloric Acid (muriatic acid)  
Hydrofluoric Acid  
Hypophosphorous acid  
Phosphoric Acid  
Sulfuric Acid  
Titanium Tetrachloride  
Ferric Chloride  
Phosphorus Pentoxide  
Sulfur Trioxide

## 02 - Organic Acids

Acetic Acid  
Acetic Anhydride  
Acrylic Acid  
Benzyl Chloride *Acutely toxic per EPA*  
Butyric Acid  
Cresol  
Dichloroacetic acid  
Difluorophosphoric Acid  
Formic Acid  
Phenol (Carbolic acid) *Acutely toxic per EPA*  
Photographic fixer  
Picric Acid solution  
Propionic Acid  
Tetra chloroethane  
Thioacetic Acid  
Trichloroacetic acid  
Trifluoroacetic Acid  
Chloroacetic Acid  
Fluoroacetic Acid *Acutely toxic per EPA*  
Sulfamic acid  
Tannic Acid  
Trichloroacetic Acid

## 03 - Oxidizing Acids

Chromic Acid *carcinogenic*  
Chromosulfuric Acid (Chromerge) *Time sensitive material*  
Nitric Acid  
Perchloric Acid  
Chromic Acid  
Periodic Acid  
Phosphotungstic Acid

## 04 - Inorganic Bases

Ammonium Hydroxide  
Potassium Hydroxide solution  
Sodium Hydroxide solution  
Calcium hydroxide  
Iodine  
Potassium Hydroxide  
Sodium Hydroxide

## 05 - Flammable and Combustible Liquids

Acetaldehyde  
Acetone *med mon*  
Acetonitrile  
Acrylonitrile *OSHA med mon, carcinogenic*  
Allyl Alcohol *Acutely toxic per EPA*  
Amyl Acetate  
Amyl Alcohol  
Amyl Chloride  
Amyl Mercaptan  
Benzaldehyde  
Benzene *OSHA med mon, carcinogenic*  
Butyl acetate  
Butyl alcohol  
Butylamine  
Carbon Disulfide *med mon, Acutely toxic per EPA*  
Carbonyl Sulfide  
Cyclohexane  
Diesel fuel

## 05 - Flammable and Combustible Liquids, continued

Diethylamine	
Diisopropyl Ether	<i>Time sensitive material</i>
Dimethyl Carbonate	
Dimethyl Sulfide	
Dimethylhydrazine	<i>carcinogenic</i>
Dioxane	<i>Time sensitive material</i>
Ethyl Acetate	
Ethyl Acrylate	<i>carcinogenic</i>
Ethyl Alcohol	
Ethyl Ether	<i>Time sensitive material</i>
Ethylene Dichloride	<i>carcinogenic</i>
Furfural	<i>med mon</i>
Furfurylamine	
Gasoline	
Heptane	
Hexane	<i>med mon</i>
Hydrazine	
Isoamyl Alcohol	
Isobutyl Alcohol	
Isopropanol	
Isopropyl Ether	<i>Time sensitive material</i>
Kerosene	
Methyl Alcohol	
Methyl Chloroform	<i>med mon</i>
Methyl Ethyl Ketone	<i>med mon</i>
Methyl formate	
Methyl Hydrazine	<i>Acutely toxic per EPA</i>
Methyl Isocyanate	<i>Acutely toxic per EPA</i>
Mineral Spirits	
Morpholine	
Nitropropane	<i>carcinogenic</i>
Octane	
Paraldehyde	
Pentane	
Petroleum Ether	
Propyl Alcohol	
Propylene Oxide	
Pump Oil	
Pyridine	
Tetrahydrofuran	<i>med mon, Time sensitive material</i>
Toluene	<i>med mon</i>
Toluene-based scintillation fluid	
Triethylamine	
Xylenes	<i>med mon</i>

## 06 - Gases

Acetylene	
Ammonia	
Argon	
Arsine	<i>Acutely toxic per EPA</i>
Butadiene	<i>OSHA med mon</i>
Butane (Liquefied Petroleum Gas)	
Carbon Dioxide	
Carbon monoxide	<i>med mon</i>

Chlorine	
Compressed Air	
Diborane	
Ethane, Refrigerated	
Ethylene	
Ethylene Oxide	<i>OSHA med mon</i>
Formaldehyde	<i>OSHA med mon</i>
Germane	
Helium	
Hydrogen	
Hydrogen Fluoride	
Hydrogen Sulfide	
Methane	
Nitric Oxide	<i>Acutely toxic per EPA</i>
Nitrogen	
Nitrogen Dioxide	<i>Acutely toxic per EPA</i>
Nitrous Oxide, Compressed	
Oxygen, Compressed	
Phosgene	<i>Acutely toxic per EPA</i>
Propane	
Silane	
Sulfur Dioxide	
Sulfur Tetrafluoride	
Vinyl Chloride	<i>OSHA med mon</i>

## 07 - Organic peroxides

Organic Peroxide solutions
Peracetic Acid
Benzoyl Peroxide
Peroxides, organic
Tert-butyl Hydroperoxide

## 08 - Oxidizers

Bromine
Hydrogen Peroxide Solution, >3%
Hypochlorite Solution (Bleach) >10%
Nitrates, inorganic
Peroxides, inorganic
Potassium Dichromate
Potassium Nitrate
Potassium Nitrite
Potassium Permanganate
Potassium Persulfate
Sodium Nitrate
Sodium Nitrite
Uranyl Nitrate

## 09 - Water Reactive, Pyrophoric & Explosive Materials

Calcium hydride
Calcium, Metal
Dinitrophenol
Lithium Aluminum Hydride
Lithium Hydride
Magnesium, Metal
Phosphorus
Picric Acid, wet

*Time sensitive material*  
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Potassium, metal *Time sensitive material*  
 Sodium borohydride  
 Sodium hydride  
 Sodium hydrosulfite  
 Sodium, metal  
 Trinitrotoluene

## 10 - Toxic and Environmentally Hazardous Chemicals

ACT-inhibiting pesticides *med mon*  
 Acetone cyanohydrin  
 Acetyl thiourea *Acutely toxic per EPA*  
 Acetyl acetone  
 Acetylaminofluorene *med mon*  
 Acetylaminofluorene *med mon*  
 Acrolein *Acutely toxic per EPA*  
 Acrylamide *carcinogenic*  
 Acrylyl chloride  
 Adiponitrile  
 Aldicarb *Acutely toxic per EPA*  
 Aldrin *Acutely toxic per EPA*  
 Amanatin, alpha-  
 Aminodiphenyl *med mon, carcinogenic*  
 Aminopyridine *Acutely toxic per EPA*  
 Ammonium arsenate  
 Aniline *med mon*  
 Antimony trioxide *carcinogenic*  
 Antimony and compounds  
 Antimycin a  
 Arsenic acid *Acutely toxic per EPA*  
 Arsenic pentoxide *Acutely toxic per EPA*  
 Arsenic trioxide *Acutely toxic per EPA*  
 Arsenic and compounds *OSHA med mon*  
 Arsenous oxide *Acutely toxic per EPA*  
 Arsenous trichloride *Acutely toxic per EPA*  
 Asbestos *OSHA med mon, carcinogenic*  
 Atrazine  
 Barium & compounds  
 Benzal chloride  
 Benzidine *med mon, carcinogenic*  
 Benzil  
 Benzointrile  
 Benzopyrene *carcinogenic*  
 Benzyl alcohol  
 Beryllium and compounds *Acutely toxic per EPA*  
 Biphenyl  
 Bis(Chloromethyl) ketone  
 Bromoacetone *Acutely toxic per EPA*  
 Bromobenzene  
 Bromoform  
 Brucine *Acutely toxic per EPA*  
 Cacodylic acid *Acutely toxic per EPA*  
 Cadmium and compounds *OSHA med mon*  
 Carbofuran  
 Carbon tetrabromide  
 Carbon tetrachloride *carcinogenic*  
 Carbophenothion

Chlorbenzene *med mon*  
 Chlordane  
 Chloroacetylaldehyde *Acutely toxic per EPA*  
 Chloroaniline *Acutely toxic per EPA*  
 Chloroform *carcinogenic*  
 Chloromethyl ether *med mon, time sensitive material*  
 Chloromethyl ethyl ether *Time sensitive material*  
 Chloromethyl methyl ether *med mon, time sensitive*  
 Chromium & compounds  
 Cobalt & compounds *med mon*  
 Colchicine  
 Cresol (all isomers)  
 Cyanides and compounds (other) *Acutely toxic per EPA*  
 Cyanogen *Acutely toxic per EPA*  
 Cyanogen bromide *Acutely toxic per EPA*  
 Cyanogen chloride *Acutely toxic per EPA*  
 Cyanuric fluoride *Acutely toxic per EPA*  
 Cyclohexanone  
 Cycloheximide  
 Dibromo chloropropane *OSHA med mon*  
 Dichlorobenzene  
 Dichlorethane  
 Dichlorobenzidine *med mon, carcinogenic*  
 Dichloroethylene  
 Dichlorophenoxyacetic acid (2,4 d)  
 Dichlorophenylarsine *Acutely toxic per EPA*  
 Diethylene glycol  
 Digitoxin  
 Dimethyl carbamoyl chloride *carcinogenic*  
 Dimethyl sulfate *carcinogenic*  
 Dimethyl polysiloxane  
 Dimethyl sulfoxide  
 Dimethyl-p-Phenylenediamine  
 Dimethylacetamide *med mon*  
 Dimethylamioazobenzene *med mon*  
 Dimethylformamide *med mon*  
 Dinitrofluorobenzene  
 Dinitrotoluene  
 Dioxins, other (TCDD, etc) *Acutely toxic per EPA*  
 Endrin *Acutely toxic per EPA*  
 Epinephrine *Acutely toxic per EPA*  
 Epoxy resins  
 Ethidium bromide  
 Ethoxyethacetate *med mon*  
 Ethoxyethanol *med mon*  
 Ethyl cyanide *Acutely toxic per EPA*  
 Ethyl benzene *med mon*  
 Ethylene dibromide *carcinogenic*  
 Ethylene fluorohydrin  
 Ethylene glycol  
 Ethylene dichloride  
 Ethyleneimine *med mon, Acutely toxic per EPA*  
 Flouride compounds *med mon*  
 Fluoroacetyl chloride  
 Formalin *carcinogenic*  
 Formamide  
 Freon

## 10 - Toxic and Environmentally Hazardous Chemicals, continued

Furan		Photographic developer	
Furfuryl alcohol		Piperidine	
Glutaraldehyde solution		Polychlorinated biphenyls (PCB)	
Hematoxylin	<i>carcinogenic</i>	Potassium cyanide	<i>Acutely toxic per EPA</i>
Hematoxylin solution	<i>carcinogenic</i>	Potassium thiocyanate	
Hexachlorobenzene		Propargyl alcohol	<i>Acutely toxic per EPA</i>
Hexachlorobutadiene	<i>carcinogenic</i>	Propenal	<i>Acutely toxic per EPA</i>
Hexachloroethane		Propidium iodide	
Hydrocyanic acid	<i>Acutely toxic per EPA</i>	Propioactone	<i>med mon</i>
Hydrogen cyanide solution	<i>Acutely toxic per EPA</i>	Propolactone	<i>med mon</i>
Hydroquinone		Pyrene	<i>carcinogenic</i>
Lead and compounds	<i>OSHA med mon</i>	Pyridinamine	<i>Acutely toxic per EPA</i>
Lindane		Resorcinol	
Malathion		Salicylic acid	
Mercaptoethanol		Selenium and compounds	
Mercuric acetate		Silica, crystalline	<i>OSHA med mon</i>
Mercuric oxide		Silver & compounds	
Mercury		Silvex (2,4,5-T)	
Mercury compounds	<i>med mon</i>	Sodium arsenate	
Methoxychlor	<i>Acutely toxic per EPA</i>	Sodium azide	<i>time sensitive, Acutely toxic per EPA</i>
Methoxyethanol	<i>med mon</i>	Sodium cacodylate	<i>Acutely toxic per EPA</i>
Methoxyethyl acetate	<i>med mon</i>	Sodium cyanide	<i>Acutely toxic per EPA</i>
Methyl bromide		Sodium dichromate	
Methyl iodide	<i>carcinogenic</i>	Strychnine	<i>Acutely toxic per EPA</i>
Methyl vinyl ketone		Styrene	<i>med mon</i>
Methyl isobutyl ketone	<i>med mon</i>	Tabun	
Methylene chloride	<i>OSHA med mon, carcinogenic</i>	Tetrachloroethylene	<i>med mon, carcinogenic</i>
Methylene dianiline	<i>OSHA med mon, carcinogenic</i>	Tetraethyl lead	<i>Acutely toxic per EPA</i>
Methylene chloroaniline	<i>med mon</i>	Tetramethylethylene diamine	
Methylene iodide		Tetrodotoxin	
Mitomycin c		Thiophenol	<i>Acutely toxic per EPA</i>
Naphthylamine	<i>med mon, carcinogenic</i>	Thiourea	<i>carcinogenic</i>
Nickel carbonyl	<i>Acutely toxic per EPA</i>	Tolidine	<i>carcinogenic</i>
Nicotine & salts	<i>Acutely toxic per EPA</i>	Toluene diisocyanate (TDI)	<i>Acutely toxic per EPA</i>
Nitroaniline	<i>Acutely toxic per EPA</i>	Toluidine	<i>carcinogenic</i>
Nitrobenzene	<i>med mon</i>	Toluidine, o-	<i>carcinogenic</i>
Nitroresol		Toxaphene	<i>Acutely toxic per EPA</i>
Nitrodiphenyl	<i>med mon, carcinogenic</i>	Trichloroethane	
Nitrophenol		Trichloroethylene	<i>med mon</i>
Nitrosodimethylamine	<i>med mon, Acutely toxic per EPA</i>	Trichlorophenol (all isomers)	
Nitrotoluene		Trichlorotrifluoroethene	
Nitrotoluene, m-,o-		Trichlorophenoxy propionic acid (2,4,5 tP)	
Osmium tetroxide	<i>Acutely toxic per EPA</i>	Triethanolamine	
Paraformaldehyde		Trifluoroethanol	
Paraquat		Uranyl acetate	
Pararosaniline		Vanadium pentoxide	<i>med mon, Acutely toxic per EPA</i>
Parathion	<i>med mon, Acutely toxic per EPA</i>	Vinyl acetate monomer	
Pentachlorophenol	<i>med mon</i>	Warfarin	<i>Acutely toxic per EPA</i>
Pesticides, other		Xylidine	<i>carcinogenic</i>
Phenol	<i>med mon</i>	Zinc chromate	<i>carcinogenic</i>
Phenyl thiourea	<i>Acutely toxic per EPA</i>		
Phenyl methyl sulfonyl fluoride			
Phenyl-naphthyl amine	<i>carcinogenic</i>		
Phenylhydrazine	<i>carcinogenic</i>		
Phenylmercury acetate	<i>Acutely toxic per EPA</i>		
Phosmet			