

Duke OESO Laboratory Safety* - GHS Criteria for Particularly Hazardous and High Risk Chemicals[‡] and for Special Animal Handling Procedures

Designation or description →	“Particularly Hazardous Substances [‡] ”		Hazardous	
	“High Risk Chemicals”			
<i>Action for work in Lab →</i>	<i>A: Customized Lab SOP approved by PI and on file with OESO.</i>	<i>B: Customized SOP prepared by lab and on file with OESO</i>	<i>C: Follow Generic Hazard-Class SOP or Guidelines.</i>	
<i>Action for Handling <u>Animals</u> Dosed w/Chemicals →</i>	<i>If box below is GRAY, follow SOP for Handling Animals Dosed with Toxic Chemicals & Hazardous Drugs and create Chemical Hazard Door Sign. See www.safety.duke.edu/laboratory-safety/animal-research/use-hazardous-agents-animals.</i>			
GHS Hazard Class ↓	GHS Category and Notes			
Acutely toxic – dermal or inhalation	1 – <i>OESO must approve SOP</i>	2	3 or 4	
Acutely toxic – oral		1	2	
Carcinogen		1, 1A or 1B	2	
Reproductive Hazard (Fetal or Fertility)		1, 1A or 1B	2	
Mutagen			1A, 1B, 2	
Specific Target Organ toxicity		Single Exposure: 1	Single Exposure: 2	Repeated Exposure: 1, 2
Sensitizer (skin or respiratory)		1A	Respiratory 1, 1B	Skin 1, 1B
Respiratory irritant			3	
Skin Corrosion/irritation			1A, 1B, 1C	
Eye Damage/Irritation			1	
Substances which, in contact with water, emit flammable gases		1, 2	3	
Pyrophoric liquid or solid	1			
Explosives	Unstable or Div 1.1 – 1.3		Div 1.4 – 1.6	
Self-reactive or Organic peroxides	Type A	Type B	Type C, D, E, F, or G	
Self-heating	1		2	
Flammable			Liquid, Solid, Gas, aerosol: 1 – 3	
Oxidizing		Liquid & solid 1	Liquid & solid 2 - 3, gas: 1 – 3	
Gases under pressure	Refrigerated Liquefied gases – “large” quantities – See LSCHP		Gases under pressure unless High Risk	
Corrosive to Metals			1	
Non-GHS Hazard Types ↓				
Other Carcinogen Designations →		NTP Known; IARC Group 1; OSHA listed carcinogens; GHS 2 <u>AND</u> IARC 2 <u>AND</u> NTP Reasonably Anticipated	NTP Reasonably Anticipated IARC 2A or 2B	
NIOSH Hazardous Drugs →			NIOSH hazardous drugs not classified above	
Nanoparticles →	Synthesis of Action A or B nanoparticles		Nanoparticles not classified above	
Investigational Drugs →		Most Investigational drugs (unless suspected to be High Risk)	Investigational drugs with SDS listing ONLY hazard classifications in this column	
OSHA Hazard Classes →	Pyrophoric gas		Simple Asphyxiant	
EU & other Hazard Classes →	Contact with water yields toxic gas	Contact with acids yields (very) toxic gas	Toxic by Eye Contact	
	Reacts violently with water	Corrosive to Respiratory Tract	May form explosive peroxides	
	Explosive when dry; Explosive with or without air contact	Strong Hydrogen Fluoride Releaser	Lachrymator	

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Updated 4-10-2020.

[‡]The Occupational Safety and Health Administration (OSHA) Hazardous Chemicals in Laboratories Standard (29 CFR 1910.1450) defines particularly hazardous substances as including select carcinogens, reproductive toxins, and chemicals with high acute toxicity. Duke also considers reactive materials to be particularly hazardous and has identified some extremely hazardous chemicals as “high risk”.