

DRI Particularly Hazardous Substance (PHS) Information Sheet

The Occupational Safety and Health Administration's (OSHA's) Hazardous Chemicals in Laboratories Standard (29 CFR 1910.1450) defines Particularly Hazardous Substances (PHSs) as including the following categories of chemicals:

- ✓ **Select carcinogens** are those that are listed by OSHA, the International Agency for Research on Cancer (IARC), or the National Toxicology Program (NTP) as known or suspected human carcinogens. Complete lists of these compounds can be found at:
 - [The OSHA website](#)
 - [The National Toxicology Program Annual Report on Human Carcinogens](#)
 - [The International Agency for Research on Cancer Monographs](#)
- ✓ **Reproductive toxins** are chemicals that may adversely affect male and female reproductive health and/or the developing fetus.
- ✓ **Chemicals Having High Acute Toxicity** are those that have oral, inhalation, or dermal LD₅₀ and LC₅₀ values below specified thresholds (see below) listed in the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 - LD₅₀ oral ≤ 50 mg/Kg (note oral route of exposure is rare in lab settings).
 - LD₅₀ dermal ≤ 200 mg/Kg
 - LC₅₀ gases, ≤ 500ppm
 - LC₅₀ vapors ≤ 500ppm
 - LC₅₀ dusts and mists ≤ 0.5 mg/l

A partial list of PHS chemicals meeting the definitions above is located in the [Appendix A of the DRI Chemical Hygiene Plan](#).

In addition to chemicals defined at high acute toxins in the OSHA lab standard, NDEP acutely hazardous material ordered in quantities greater than the [Reportable Quantities \(RQ\)](#); [highly reactive chemicals](#) (any quantity of a pyrophoric, water reactive, organic peroxide, explosive or oxidizer class IV or combustible dusts greater than one pound) and any quantity of a toxic gas, is considered a particularly hazardous substance.

If my lab is using a chemical considered a PHS, what do we need to do?

- ✓ **Complete a [PHS approval form](#)** and submit to DRI EH&S for approval **prior to ordering** the chemical
- ✓ Prepare written, lab-customized [Standard Operating Procedures \(SOPs\)](#) for the chemical and implement them.
- ✓ Designate an area in the lab for work with PHSs
- ✓ Maintain an accurate and up-to-date inventory of PHSs used in your laboratory.