

 <p>Carnegie Mellon University Environmental Health & Safety FIRE LAB WORK</p>	<p>Environmental Health and Safety Particularly Hazardous Substances Definition</p>
<p>Date of Issuance:</p>	<p>Revision Date: 3/11/2024</p>
<p>Revision Number: 2</p>	<p>Prepared by: EHS</p>

1. Particularly Hazard

- a. Select carcinogens, acutely toxic chemicals, reproductive toxins and chemicals known to have undesirable biological effects. Refer to the information document "[Particularly Hazardous Table](#)".
- b. Chemicals for which reliable toxicity information is not available, but are highly suspected to be a PHS because of their similarity in chemical structure or function to known toxic agents.
- c. Chemicals that are explosive or otherwise violently reactive, such as pyrophorics and water-reactive materials.

2. Select carcinogens - are any substance that meets at least one of the following criteria:

- a. Regulated by OSHA as a carcinogen
- b. Listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP)
- c. Listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer (IARC) Monographs
- d. Listed in either Group 2A or 2B by IARC or under the category "reasonably anticipated to be carcinogens " by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:
 - i. After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m³
 - ii. After repeated skin application of less than 300 mg/kg of body weight, per week
 - iii. After oral dosages of less than 50 mg/kg of body weight per day

3. Acute toxicity - is the ability of a chemical to cause a harmful effect after a single exposure. Parameters for assessing the risk of acute toxicity of a chemical are its LD50 and LC50 values. Acutely toxic chemicals meet at least one of the following criteria:

- a. Chemicals with an oral LD50 in rats <50mg/kg
- b. Chemicals with a skin contact LD50 in rabbits <200mg/kg
- c. Chemicals with an inhalation LC50 in rats <200ppm/per hour

4. **Lethal Dose 50 (LD50)** - is defined as the amount of a chemical that when ingested, injected, or applied to the skin of test animals under controlled laboratory conditions will kill one-half (50%) of the animals.
5. **Lethal Concentration 50 (LC50)** - is the concentration of the chemical in air that will kill 50% of the test animals exposed to it.
6. **Reproductive toxins - are substances that cause chromosomal damage and substances with lethal or teratogenic effects on fetuses.**

7. Revisions

Date	Documented Changes	Initials
5/24/2021	Updated format and Accessibility Update	MAS
3/11/2024	Reviewed and no updates necessary	AL