

Principal Investigators Chemical Hazard Assessment for Animal Research

Principal Investigator: _____ Date: _____

Building and Laboratory: _____ Protocol #: _____

	A.	B.	C.	D.	E.		F.	G.	H.	I.
	Chemical Agents	Select Carcinogen y/n	Reproductive Toxin y/n	Chemical Toxicity LD ₅₀ or LC ₅₀ mg/kg, ppm, or other unit	Acute Toxicity or Health Hazard Rating	NFPA GHS	Novel Substance or Particularly Hazardous Substance y/n	Route(s) of Administration and Dose	Shedding or Excretion % and/or Duration	Other Health Hazards, Chemical Concerns, CAS# or Comments
Ex.	<i>Isoflurane</i>	<i>No</i>	<i>No</i>	<i>Oral rat 4770 mg/kg</i>	<i>0-2</i>		<i>No</i>	<i>Vapor chamber</i>	<i>0.17%</i>	<i>CAS# 26675-46-7</i>
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Column Notes:

- A. List all anesthetics, drugs, controlled substances, carcinogens, allergens, intoxicants, reproductive toxins, chemical toxins, and “novel” synthesized experimental drugs, chemicals, or mixtures. For novel substances provide as much information as possible and note the chemical as “novel” on the form.
- B. Refer to the list of Select Carcinogens provided in Appendix B, Indiana University *Laboratory Safety and Chemical Hygiene Plan*. (www.ehs.indiana.edu/lab_safety.shtml). The list includes known, probable, or possible carcinogens listed by IARC, NTP, or OSHA.
- IARC = International Agency for Research on Cancer (Group 1, 2a, and 2b carcinogens)
- NTP = National Toxicology Program
- OSHA = Occupational Safety and Health Administration
- C. Identify reproductive toxins including both mutagens and teratogens. Refer to the Safety Data Sheet for the specific chemical or preparation being used.
- D. Provide the Lethal Dose (LD₅₀) or Lethal Concentration (LC₅₀) and route of entry (oral, skin, inhalation, or “LD₅₀ unknown”) for “rats” whenever possible. Refer to the Safety Data Sheet for the specific chemical or preparation being used.
- E. Provide NFPA Health Hazard rating or GHS rating if possible.
- F. Determine if the substance is a new (novel) substance with unknown toxicity or an OSHA “Particularly Hazardous Substance”
- OSHA “Particularly Hazardous Substances” include the select carcinogens (human), reproductive toxins, and acutely toxic chemicals (those with an NFPA rating of 3 or 4, or a GHS acutely toxic rating of Category 1 or 2).

Route of Entry	National Fire Protection Association NFPA 704 Health Hazard Classifications		OSHA Hazard Communication Standard (29 CFR 1910.1200) Globally Harmonized System of Chemical Classification GHS Acute Toxicity Ratings	
	4	3	1	2
Oral LD ₅₀	0-5 mg/kg	>5-50	0-5 mg/kg	>5-50
Skin Contact LD ₅₀	0-40 mg/kg	>40-200	0-50 mg/kg	>50-200
Inhalation LC ₅₀	0-1000 ppm	>1000-3000	0-100 ppm	>100-500

“Particularly Hazardous Substances” must be handled with standard laboratory PPE and precautions **plus:**

1. Must be handled in a containment (fume hood or glovebox) if exposed to the air or closed system (instrument plumbing, glassware, cannula, gavage, syringe).
 2. Must be posted with a sign designating the area as a location where carcinogens, reproductive toxins or acutely toxic chemicals are present.
 3. Must decontaminate area after use.
 4. Must have provisions for waste removal (lab waste, animals, and bedding).
- G. Route of administration planned in Animal Use Protocol. Include inhalation, ingestion, skin contact, and injection as lab prepared food, premixed food, in water, nose, anesthetic chamber, syringe, gavage, etc.
- F. Provide any information known about the potential for shedding or excretion of the substance in urine, feces, or vomit into the animal bedding as the administered chemical or as a metabolite. If unknown, state “probable,” “unlikely,” “inconclusive,” or “unknown” to describe the potential.
- G. Provide any other health or physical hazard associated with the substance such as corrosivity, reactivity, flammability, explosively, or any other property.