

## WVU IACUC Standard Operating Procedure (SOP): Hazardous Chemicals Used with Animals

### Purpose

This document outlines the procedures to be used by personnel when laboratory animals will be administered or exposed to a hazardous chemical to ensure that hazards are identified, and procedures are in place to mitigate those hazards. Because animal research can involve both a research laboratory and an animal facility, safety precautions and procedures will be reviewed for all relevant locations where a chemical is stored, prepared, and used. These procedures help protect research personnel during preparation and administration of the hazardous chemical to the animals, as well as research and animal care personnel when handling laboratory animals after their exposure.

*NOTE: for radioactive materials, see IACUC # 11-010 Guidance for Use of Radioactive Materials in Animal Studies*

### General Information

Research activities may involve administering or exposing hazardous chemicals to laboratory animals. If not contained properly, these activities can negatively impact the health of research and animal care personnel as well as other animals. Extra precautions *must* be taken regarding storage, preparation, transport, and chemical administration due to the hazards associated with exposure.

Contact the IACUC to get approval for any deviations from this SOP. Some procedures described in this SOP may not be applicable for non-rodent species; contact the WVU Health Sciences Center (HSC) Safety Office/EHS at 304-293-3968, and/or the Office of Laboratory Animal Resources (OLAR) at 304-293-2722 for guidance in those cases.

“Hazardous Chemicals” in this document include chemicals, substances (nanomaterials, vapors, asphyxiating gases, etc.) and/or drugs.

### Procedures

#### A. The Principal Investigator (PI):

1. Disclose the administration or exposure of any hazardous chemical(s) to animals in your animal use protocol(s) for IACUC and HSC Safety Office/EHS review.
2. Prepare an SOP for **each** hazardous chemical. Substances with the same mechanism of action or in the same drug class can be grouped into a single SOP.
3. The requirement of an SOP may be dependent on:
  - a. quantity purchased.
  - b. state of the chemical acquired from the manufacturer/distributor (i.e., powder, liquid, pellet, etc.).

- c. the amount of preparation needed to achieve a treatment dose (i.e., purchased a substance in a form that is ready to use versus a form that needs weighing, reconstitution, dilution, and/or sterilization steps performed in the lab).
4. An SOP will likely be **required** for any substance that (*Refer to Section 2: Hazards Identification and Section 11: Toxicological Information of the Safety Data Sheet*):
  - a. has a “4” rating in health from the National Fire Protection Agency (NFPA).
  - b. is a antineoplastic agent ([NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016](#)).
  - c. is labeled as a Carcinogen on the chemical’s Safety Data Sheet (GHS Categories 1A, 1B).
  - d. is labeled as a Reproductive Toxin on the chemical’s Safety Data Sheet (GHS Categories 1A, 1B).
  - e. is labeled as a Mutagen on the chemical’s Safety Data Sheet (GHS Categories 1A, 1B).
  - f. is requested by the HSC Safety Office/EHS to ensure hazards and risks are identified and proper procedures are in place to control the risks.
5. Contact the HSC Safety Office/EHS for an SOP template. Consult the chemical’s Safety Data Sheet (SDS) and work with the HSC Safety Office/EHS to identify proper procedures for personnel to use when working with the hazardous chemical(s) and when handling animals that have been administered or exposed to the hazardous chemical(s).
6. Submit a [waste determination request](#) from WVU EHS. (On the form, under the tab “Hazardous Materials Service Request” choose “Waste Determination”)
7. Attach **each** hazardous chemical SOP and SDS to your animal use protocol when submitting to the IACUC for review.
8. Ensure personnel working with hazardous chemicals complete EHS-provided training courses as applicable and are familiar with all relevant hazardous chemical SOP(s) and SDSs. Documentation of applicable training should be maintained.
9. Implement corrective measures to eliminate identified hazards, including re-educating staff on proper procedures when deficiencies are identified. Ensure deficiencies are corrected in a timely manner.
10. If the use of hazardous material requires alterations to standard husbandry practices, a “Special Care Form” **must** be submitted to OLAR prior to the use of any hazardous material.
11. For animals that need to be housed in the V100 hallway (chemical hazard rooms) of the HSC vivarium, submit an animal transfer form on the OLAR website to have the animals moved.

12. Notify the OLAR Director and/or Facility Manager **BEFORE** the administration or exposure of hazardous chemical(s) to animals housed in the vivarium and **provide OLAR copies of all relevant hazardous chemical SDSs.** (*This can also be done by research or lab staff, under the PI's direction*)
13. Ensure all chemical hazards are properly identified at the room and cage/enclosure level for any animals that have been administered or exposed to hazardous chemicals.

**B. HSC Safety Office/EHS:**

1. Review all protocols involving the administration or exposure of a hazardous chemical to an animal.
2. Assist in the development of hazardous chemical SOPs.
3. Make recommendations for hazardous chemical containment housing and procedures.
4. Assign necessary safety training to personnel handling hazardous chemicals.
5. Provide OLAR with an Animal Hazardous Substance - Precautions for OLAR Staff Chemical Hazard form.

**C. The OLAR Director and/or Facility Manager:**

1. Oversee and provide support in animal housing and procedure rooms within the OLAR vivaria.
2. Ensure that OLAR personnel have access to all relevant Animal Hazardous Substance-Precautions for OLAR Staff forms, SDS sheets and Special Care Forms.
3. Ensure proper containment housing procedures and hazardous waste disposal procedures are in place and followed.
4. Ensure OLAR personnel working in rooms where animals have been exposed to hazardous chemicals complete EH&S-provided training courses as applicable and maintain documentation of that training.
5. Ensure OLAR personnel working in rooms where animals have been exposed to hazardous chemicals are familiar with relevant hazardous chemical Animal Hazardous Substance-Precautions for OLAR Staff forms.
6. Ensure OLAR personnel know how to respond to a chemical spill or exposure.
7. Implement corrective measures to eliminate identified hazards, including re-educating staff on proper procedures when deficiencies are identified. Ensure deficiencies are corrected in a timely manner.

**D. Personnel having contact with hazardous chemical(s) and/or animals that have been exposed to them:**

1. Complete EHS- and OLAR-provided training, as applicable.
2. Be familiar with and follow the procedures outlined in:
  - a. WVU EHS Chemical Hygiene Program, if applicable
  - b. your laboratory chemical hygiene plan, if applicable
  - c. this SOP
  - d. any relevant hazardous chemical SOP(s), SDSs, and Animal Hazardous Substance-Precautions for OLAR Staff forms
  - e. your supervisor's instructions
  - f. any relevant OLAR procedures and recommendations
3. When handling animals that have been administered or exposed to hazardous chemicals, perform all recommended safety measures to minimize your risk of exposure.
4. Ensure all chemical hazards are properly identified at the room and cage/enclosure level for any animals that have been administered or exposed to hazardous chemicals.
5. Ensure proper containment housing procedures and hazardous waste disposal procedures are followed.
6. Notify your supervisor of any work-related injuries and illnesses (including animal bites) within 24 hours of the incident and submit an injury/illness report.

**Contact Information**

For additional information and assistance to determine if a chemical/substance is considered hazardous and whether it requires containment housing when administering or exposing it to animals, you may contact:

Jessalyn Hadfield  
HSC Safety Office/  
Environmental Health & Safety  
[jhadfiel@mail.wvu.edu](mailto:jhadfiel@mail.wvu.edu)  
304-293-3968

Director or Facility Manager  
Office of Laboratory Animal Resources  
[hsc.wvu.edu/olar/contact-us/](http://hsc.wvu.edu/olar/contact-us/)  
304-293-2722