Instructions for Completing the OEHS Animal Research Protocol Hazard Review Form

The purpose of the chemical and physical hazard review is to verify that hazards related to the use of chemical and physical hazards in animal studies have been identified, and procedures are in place to mitigate those hazards. Since research with animals can involve both research laboratory and animal care facility spaces, chemical and physical hazards and associated safety precautions and procedures shall be reviewed for all relevant locations where the hazards are prepared, stored, and used. Complete a separate hazard assessment page for each chemical requested. Attach the manufacturer’s SDS or provide a link to the manufacturer’s SDS for each item you will be using.

Contact your EHS manager if assistance is required: Amanda Smith (TUHSC) awigley@tulane.edu or Benjamin Cieslinski (UT) gcieslin@tulane.edu

Principal Investigator: The same as the researcher listed on the IACUC protocol

E-mail: List the e-mail address for the PI

Department: The Principal Investigator’s primary department

Phone: List the principal investigator’s phone number

Contact Person: List an alternate person to be contacted with questions regarding the hazard review in lieu of the principal investigator

E-mail: Contact person’s e-mail address

Phone: Contact person’s phone

Protocol Title: The title listed on the IACUC protocol

Protocol Number: The number assigned to this protocol by the Tulane IACUC office

Location(s): All locations where hazards will be prepared, stored, and administered to research animals

Hazards: All hazards in the protocol that will be addressed

Certification statements: An electronic signature may be used or print, sign, and scan the document before returning it.

Hazard Information

Chemical name: List the full chemical name of the item. Synonyms or abbreviations (STZ, DOX, Brd-U) may be included but are not to be used as the sole identifier of the chemical.

Chemical Abstract Services Number (CAS#): A unique numeric identifier that designates only one substance. CAS numbers may be found on manufacturers’ SDSs or with a basic internet search

Safety Data Sheet: Please include either a link to the manufacturer’s most current Safety Data Sheet or include an electronic file of the SDS.

Hazards – Refer to Section 2 of the SDS to determine which Global Harmonization System (GHS) classifications the manufacturer has indicated for the items being used.
Health hazard means a chemical which is classified as posing one or more hazardous effects listed below. The criteria for determining a health hazard are detailed in Appendix A to 29 CFR §1910.1200 (Hazard Communication) Health Hazard Criteria.

Carcinogen. Substance or a mixture of substances which induce cancer or increase its incidence.

Reproductive Toxin, causes adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring.

Mutagen. Agents giving rise to an increased occurrence of mutations in populations of cells and/or organisms

Target Organ Toxin. Specific, non-lethal target organ toxicity arising from a single, repeated, or prolonged to a chemical. List the specific organ targeted

Acute Toxicity. A substance or mixture having adverse effects occurring after oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours. All experimental compounds or chemicals of unknown hazards must be treated as having an Acute Toxicity until the hazard category is verified. Please contact your EHS manager if you have any questions.

Other. Other hazards that can appear on the SDS may include skin corrosion, skin irritation, serious eye damage, eye irritation, respiratory sensitization, skin sensitizer, germ cell mutagen, or aspiration hazard. List the hazard.

Physical Hazard means a chemical that is classified as posing one or more hazardous effects listed below. Also included in this section are ionizing and non-ionizing radiation and physical hazards due to extreme, heat, cold, noise or excessive vibrations. The criteria for determining a physical hazard are detailed in Appendix B to §1910.1200 (Hazard Communication) Physical Hazard Criteria.

Ionizing radiation alpha, beta, gamma, x-rays, fluoroscopy, irradiator. List the isotope and/ or equipment to be used

Non-ionizing radiation: UV light and lasers. List the specific equipment to be used.

Reactive Chemicals: explosive, flammable, oxidizer, self-reactive, pyrophoric, self-heating, organic peroxide, corrosives, gas under pressure, or where contact with water emits flammable gas.

Other Physical Hazards Extreme cold, noise, heat, vibration, etc.

Administration

Route: Indicate how the items will be administered to the research animals

Concentration: List the concentration of stock solutions that will be administered to research animals

Dose per animal: the amount that will be given (either total dose or by weight)

Hormone administered outside the physiologic range of the animal: Hormones administered outside the physiologic range of the animal (time release or small single doses) may allow for less restrictive disposal and cleaning requirements as the amount excreted are not more than what is normally excreted by the animal.
Animal shedding/ excretion: Indicate whether the hazard has the potential to leave the animal and the route by which research or animal care staff may be exposed to the hazard and its metabolites

Personnel Protection and Engineering Controls

Check Section 8 of the SDS for information regarding these protections. Indicate which type of equipment will be used to protect personnel when working with hazards. Include considerations for work being done in the lab and in the vivarium. If local exhaust ventilation or other engineering controls not listed will be used, please indicate the type.

Personal Protective Equipment (PPE): Indicate what PPE will be used by lab staff and DCM Staff when preparing solutions, working with animals that have been administered hazards.

- **BSL – 1 PPE for DCM Staff** consists of nitrile gloves, facility dedicated scrubs and shoes
- **BSL – 2 PPE for DCM staff** consists of nitrile gloves, shoe covers, hair bonnet, surgical mask, and disposable gown

Cage labeling: Cages that contain carcinogens or chemical hazards must be labeled to inform staff that a hazard exists. If a cage label is required, indicate which type of labeling will be used and how long after administration the cages must remain labeled.

Special handling for cages: Indicate special handling needs. *E.g. Lab staff will handle water changes when chemicals are issued in drinking water; filter top cages are needed in the vivarium.*

Cleaning and Disposal

Cages: Standard BSL-1 – Cages are opened and changed inside a change station or biosafety cabinet. Dirty cages are dumped in the cage wash room using a HEPA filtered dump station, and cleaned through the cage washer.

Standard BSL-2 – Cages are opened and changed inside a biosafety cabinet. Dirty cages are autoclaved before being dumped in the cage wash room using a HEPA filtered dump station, and cleaned through the cage washer.

Other: any other considerations or actions that need to be taken. *E.g. bedding should be double bagged prior to disposal.*

Water bottles: Standard disposal is via the sanitary sewer. Other: *e.g. bottles that contained 5-Bromo-2’-deoxyuridine (Brd-U) need to be washed with 10% bleach prior to returning to cage wash area.*

Bedding: Standard: bedding is bagged and disposal is via regular trash. Bedding that contains carcinogenic, trace chemotherapeutic or other hazardous chemicals excreted via feces and urine should be treated by incineration based on SDS information or other resources.

Carcasses: Standard disposal is bagging and storage in morgue freezer prior to incineration by a commercial regulated medical waste vendor.

Chemicals: Left over chemicals may need to be turned over to OEHS for proper disposal. Every effort should be made to make only the amount of material needed to administer to the animals. Any excess material should be disposed via OEHS’ hazardous chemical pickup request system.

References:

OSHA – Occupational Exposure to Hazardous Chemicals in the Laboratory 29 CFR 1910.1450
United States Regulatory Commission 1996 8.29, Instruction Concerning Risks from Radiation Exposure

OSHA – Hazard Communication 29 CFR 1910.1200 Appendices A and B

National Research Council – Occupational Health & Safety in the Care and Use of Animals, 1997

Tulane University Department of Comparative Medicine – Policy 6.2.3 Safe Work Practices for Animal Research Involving Toxic Chemicals