Developmental & Reproductive Toxin Hazard Class Standard Operating Procedure

1. Purpose
This standard operating procedure (SOP) is intended to provide guidance on how to safely work with developmental and reproductive toxins in a University of Arizona (UA) laboratory. Laboratory personnel should review this SOP, as well as the appropriate Safety Data Sheet(s) (SDSs), before using developmental and reproductive toxins. If you have questions concerning the requirements within this SOP, contact the Approval Holder (AH)/Approval Safety Coordinator (ASC), or the Research Laboratory & Safety Services (RLSS).

2. Scope
This hazard class SOP only addresses safety issues specific to the developmental and reproductive toxicity of a chemical; several hazard class SOPs may be applicable for a specific chemical.

3. Hazard Description
This hazard class includes chemicals that affect the reproductive capabilities of a person, including mutations and effects on the fetus. The following hazard types are included in this SOP:

- Causes genetic defects
- May damage fertility or the unborn child
- May cause harm to breast-fed children

The first two hazard types listed above are split into two categories based on the severity of the hazard. Chemicals with the higher categories of developmental and reproductive toxicity are considered to be particularly hazardous chemicals, as defined by OSHA. However, it is important to note that not every chemical under this hazard class is a particularly hazardous chemical.

4. General Control of Hazards
The following general control measures should be implemented whenever using or handling chemicals which act as a developmental or reproductive toxin:

- Plan experiments involving delayed health hazards carefully, including consulting the SDS(s). Do not handle chemicals that present delayed health hazards until all safety precautions have been read and understood.
- Minimize the quantity and/or concentration of these chemicals used or synthesized to the smallest amount immediately needed for an experiment.
- Design experimental procedures to minimize the potential for splash, splatter or other likely scenarios of accidental contact.
- Do not breathe dust, fumes, gas, mist, vapors or sprays when handling these chemicals.
- Wash hands thoroughly after handling.
- Do not bring contaminated work clothing out of the laboratory.
• Keep exposure to these chemicals as low as reasonably achievable while pregnant or nursing. For additional information on dealing with pregnancy and working with hazardous chemicals, contact the Arizona Poison & Drug Information Center at 1-800-222-1222.

5. Engineering Controls
A certified chemical fume hood must be used when handling developmental and reproductive toxins. Other approved ventilated enclosures (e.g. glove box) may be used to control exposure to developmental and reproductive toxins. For additional information on engineering control options, contact the RLSS or your AH/ASC.

6. Personal Protective Equipment
At a minimum, all laboratory workers must wear safety glasses, long pants, closed-toed shoes, a laboratory coat and examination gloves when working with hazardous chemicals in a laboratory.

Laboratory personnel working with developmental or reproductive toxins should wear splash goggles instead of safety glasses. Double gloving with examination-type gloves, or the use of chemical resistant gloves, should be used if the compound can be readily absorbed through the skin. Refer to the Personal Protective Equipment Selection Guide on the RLSS website for further information on appropriate chemical-resistant gloves.

If developmental and reproductive toxins cannot be used in a ventilated enclosure (i.e. chemical fume hood) due to experimental restrictions, laboratory workers should consider the use of a respirator. Contact the RLSS to perform a hazard assessment of your experimental procedures to determine if respiratory protection should be used. An RLSS hazard assessment report is required prior to registration into the Respiratory Protection Program, facilitated by Risk Management Services.

7. Handling and Storage Requirements
Segregate developmental and reproductive toxins from other hazardous chemicals. Ideally, this segregation would occur via separate cabinets. If space is limited, however, storing developmental and reproductive toxins in secondary containment (i.e. plastic trays or Tupperware) within the same cabinet as other chemicals is acceptable. Developmental and reproductive toxins must be securely stored, and access to these chemicals should be restricted. Those that are classified as particularly hazardous chemicals must be stored and used within a labelled designated area. If you are unsure if a developmental or reproductive toxin constitutes a particularly hazardous chemical, be conservative and treat them as if they are.

Some chemicals within this hazard class may require exposure monitoring and routine medical surveillance for any laboratory personnel who may be exposed. The RLSS will inform the AH/ASC if any chemicals used in the laboratory require such monitoring/medical surveillance.

Carefully plan the transportation of developmental and reproductive toxins. Handling chemicals outside of the laboratory area should be minimized, but when necessary, wear full personal protective equipment and transport the chemicals in unbreakable secondary containment.
8. Waste Disposal

Waste chemicals containing developmental and reproductive toxins should be collected in compatible waste containers (i.e. plastic 3.5 gallon buckets) and segregated from incompatible wastes. Some particularly hazardous chemicals may require special decontamination and disposal procedures. Contact Risk Management Services for further information on the disposal of chemicals.

9. Spill and Incident Procedures

Laboratory personnel may clean a small spill of developmental and reproductive toxins themselves, as long as they wear appropriate personal protective equipment and have appropriate training. If the spill is large, requires a respirator for cleanup, or occurs in a public area, do not attempt to clean the spill yourself. Evacuate the area and follow the procedures in the University Chemical Hygiene Plan section on major chemical spills. Inform the RLSS of all major chemical spills.

If a laboratory worker is injured or exposed to developmental and reproductive toxins, immediately notify the AH/ASC; call 911 if the laboratory worker needs immediate medical attention. Remove contaminated clothing and immediately flush the contaminated areas with water for at least 15 minutes. For eye exposures, immediately remove contact lenses, if present, and flush the eyes with water for at least 15 minutes. Inform the RLSS and Risk Management Services of the incident as soon as practicable.

If the exposure is less severe, and the laboratory worker is left feeling ill, persistent discomfort, or has concerns about potential developmental effects, they should call the Arizona Poison & Drug Information Center at 1-800-222-1222 to determine if further medical action is required. Consult the chemical’s SDS for more specific information on appropriate first aid.

10. Designated Area

Chemicals that cause genetic defects or damage fertility or the unborn child are considered to be particularly hazardous chemicals. Because of this, some chemicals in this hazard class will require the designation of an area for their use and storage. All laboratory workers must know the location of these designated areas, and must use or store particularly hazardous chemicals only within them. Designated areas also require posting with the “Designated Area Label,” which can be found on the RLSS website.