

REPRODUCTIVE TOXINS STANDARD OPERATING PROCEDURE

HAZARDOUS CHEMICALS/CLASS OF HAZARDOUS CHEMICALS

- Reproductive hazards are substances which affect the reproductive capabilities including chromosomal damage (mutagens) and effects on the fetus (teratogens). A list of some reproductive hazards is included at the end of this SOP.

HAZARD DESCRIPTION

- Reproductive hazards can cause birth defects.

PROTECTION PROCESS

- Good laboratory technique
- Appropriate shielding through use of personal protective equipment
- Use of fume hood
- Availability of eye wash station and safety shower

PERSONAL PROTECTIVE EQUIPMENT

- Safety glasses/goggles (Wear chemical safety goggles when using small quantities or safety glasses or chemical safety goggles with face shield when using large quantities or when a splash potential exists.)
- Gloves should be worn when handling reproductive toxins. Disposable latex or nitrile gloves provide adequate protection against accidental hand contact with small quantities of most laboratory chemicals. Lab workers should contact OEHS for advice on chemical resistant gloves when direct or prolonged contact with hazardous chemicals is anticipated.
- Lab coats, closed toed shoes and long sleeved clothing should be worn when handling oxidizing chemicals.
- Additional protective clothing should be worn if the possibility of skin contact is likely.

ENGINEERING/VENTILATION CONTROLS

- Manipulation of reproductive hazards should be carried out in a fume hood.
- Under certain conditions, reproductive toxins can be used in a biological safety cabinet. The biological safety cabinet is designed to remove the reproductive toxins before the air is discharged into the environment. Reproductive toxins that are volatile must not be used in a biological safety cabinet unless the cabinet is vented to the outdoors.
- Certain reproductive hazards must be handled in a glove box rather than a fume hood. The Division of Environmental Health and Safety or the Principal Investigator will determine if this is required.
- For small quantities of reproductive toxins, portable shields, which provide protection to all laboratory occupants, are acceptable.
- A safety shower and eyewash must be available and accessible when working with reproductive toxins.

SPECIAL HANDLING PROCEDURES AND STORAGE REQUIREMENTS

- Reproductive hazards must be stored in a designated area.

SPILL AND ACCIDENT PROCEDURES

- Before beginning work with reproductive toxins, develop emergency procedures which address response actions to accidental exposure from fires, explosions, or spills. The procedures should address as a minimum the following:
 - Who to contact: (University police, and Office of Environmental Health and Safety,
 - Principal investigator of the laboratory including evening phone number)
 - The location of all safety equipment (showers, spill clean up supplies, eye wash, fire extinguishers, etc.)
 - The method used to alert personnel in nearby areas of potential hazards
 - Special first aid treatment required by the type of corrosive material(s) handled in the laboratory
- Anticipate spills by having clean up equipment on hand. The appropriate clean up supplies can be determined by consulting the material safety data sheet. This should occur prior to the use of any reproductive toxin.
- In the event of a spill, all personnel in the area should be alerted.
- Do not attempt to handle a large spill of reproductive toxins. Vacate the laboratory immediately and call for assistance (Division of Environmental Health & Safety 292-1284 or 911).
- Remain on the scene, but at a safe distance, to receive and direct safety personnel when they arrive.

WASTE DISPOSAL

- All materials contaminated with reproductive hazards should be disposed of as a hazardous waste.
- Wherever possible, attempt to design research in a manner that reduces the quantity of waste generated.
- Questions regarding waste pick up should be directed to the Office of Environmental Health and Safety.
- This office can also assist you in minimizing waste generation.

SPECIAL APPROVAL REQUIRED

- You should notify the Office of Environmental Health and Safety prior to the initial use of reproductive hazards.
- Notification is also required following significant changes in procedures or the quantity of materials used.

DECONTAMINATION

Personnel:

- Wash hands and arms with soap and water immediately after handling reproductive toxins.

Area:

- Decontamination procedures vary depending on the material being handled. The toxicity of some materials can be neutralized with other reagents. All surfaces should be wiped with the appropriate cleaning agent following dispensing or handling.
- Waste materials generated should be treated as hazardous waste.

Equipment:

- Decontaminate glassware or equipment before removing them from the designated area.

DESIGNATED AREA

- All locations within the laboratory where reproductive hazards are handled should be demarcated with designated area caution tape (available from OHES 292-1284) and/or posted with designated area caution signs. This includes all fume hoods and bench tops where the reproductive hazards are handled.
- Where feasible, reproductive hazards should be manipulated over plastic-backed disposable paper work surfaces. These disposable work surfaces minimize work area contamination and simplify clean up.
- The room sign for the laboratory must contain a “Designated Areas Within” identifier.

EXAMPLES OF REPRODUCTIVE TOXINS

Acrylic acid
Aniline
Benzene
Cadmium
Carbon disulfide
N,N-dimethylacetamide
Dimethylformamide (DMF)
Dimethyl sulfoxide (DMSO)
Diphenylamine
Estradiol
Formaldehyde
Formamide
Hexachlorobenzene
Iodoacetic acid
Lead compounds
Mercury compounds
Nitrobenzene
Nitrous oxide
Phenol
Polychlorinated and polybrominated biphenyls
Toluene
Vinyl chloride
Xylene