

## Particularly Hazardous Substance Use Approval Form

Before using any particularly hazardous substance, please complete this form and have it approved by your supervisor or Chemical Hygiene Officer. See the back of this form for more complete definitions of a particularly hazardous substances and instructions for completing this form. **Do not use the substance until approval is granted.**

Name \_\_\_\_\_ Phone \_\_\_\_\_ Bldg/Rm. \_\_\_\_\_

### Substance Information

Chemical name	<input type="radio"/> Carcinogen
Estimated Rate of Use (e.g., grams/month)	<input type="radio"/> Reproductive Toxin
MSDS reviewed and readily available <input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> High Acute Toxicity

### Hazards

Physical Hazards		Health Hazards	
Flammable <input type="radio"/> Yes <input type="radio"/> No	Corrosive <input type="radio"/> Yes <input type="radio"/> No	Significant Route(s) of Exposure	
Reactive <input type="radio"/> Yes <input type="radio"/> No	Temperature sensitive <input type="radio"/> Yes <input type="radio"/> No	Inhalation Hazard <input type="radio"/> Yes <input type="radio"/> No	
Stability (e.g., decomposes, forms peroxides, polymerizes, shelf-life concerns) <input type="radio"/> Stable <input type="radio"/> Unstable		Skin Absorption <input type="radio"/> Yes <input type="radio"/> No	
Known incompatibilities		Sensitizer <input type="radio"/> Yes <input type="radio"/> No	
		Medical surveillance <input type="radio"/> Yes <input type="radio"/> No	

**Procedure** (Briefly describe how material will be used & precautions for preparation of stock solutions & dilutions)

Vacuum system used  Yes  No. If yes, describe method for trapping effluents \_\_\_\_\_

Administered to animals  Yes  No. If yes, special precautions for excreta; are metabolites hazardous? (describe)

### Exposure Controls

Personal Protective Equipment (PPE) (Check all that apply)	Ventilation/Isolation
<input type="radio"/> Safety glasses <input type="radio"/> Chemical splash goggles <input type="radio"/> Face shield	Fume hood required <input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Gloves ( type _____ ) <input type="radio"/> Lab coat <input type="radio"/> Apron	face velocity operates at > 100 feet per minute <input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Respirator <input type="radio"/> SCBA ( <i>Respirators / SCBA require Safety approval</i> )	Glove box required <input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Other, please describe	Vented gas cabinet required <input type="radio"/> Yes <input type="radio"/> No

### Location/Designated Area

Building: _____ Room: _____	Storage Method/Precautions
Describe the area where substance(s) will be used and the method of posting it as a designated area.	Building: _____ Room: _____
	<input type="radio"/> refrigerator/freezer <input type="radio"/> fume hood
	<input type="radio"/> double containment <input type="radio"/> vented cabinet
	<input type="radio"/> flammable liquid storage cabinet
	<input type="radio"/> other, describe

### Spills, Decontamination and Waste Disposal

Spill control materials readily available <input type="radio"/> Yes <input type="radio"/> No	In-lab neutralization <input type="radio"/> Yes <input type="radio"/> No
Special personal protective equipment needed (e.g., SCBA) <input type="radio"/> Yes <input type="radio"/> No	Deactivation <input type="radio"/> Yes <input type="radio"/> No
Decontamination method	Dispose to Safety Dept. <input type="radio"/> Yes <input type="radio"/> No

### Authorization

This individual has demonstrated an understanding of the hazards of the listed substance and plans to handle the substance in a manner that minimizes risk to health and property. He/she is authorized to use the substance in the manner described.

\_\_\_\_\_  
Principal Investigator / Supervisor

\_\_\_\_\_  
Chemical Hygiene Officer

## Using this form

For purposes of this form, a particularly hazardous substance (PHS) includes known or suspected human carcinogens, reproductive toxins, and substances with acute toxicity above certain thresholds. A more complete definition is included in your departmental Chemical Hygiene Plan or Appendix D, Chemical Safety and Disposal Guide. Each individual planning to use a PHS must complete this form and have it approved by their Principal Investigator or supervisor and Chemical Hygiene Officer prior to their initial use. Responsibility for determining whether a chemical is a PHS and completing this form rests jointly with the supervisor and the individual seeking use approval.

## Substance Information

**Carcinogen:** if on IARC, OSHA or NTP list. **Reproductive toxin:** mutagens, teratogens, embryotoxins. **High Acute Toxicity:** oral LD<sub>50</sub> = 50 mg/kg, skin LD<sub>50</sub> = 200 mg, air LC<sub>50</sub> = 200 ppm or = 2 mg/l. MSDS may be available in hard copy or via the internet.

**Hazards** (Refer to *Physical Properties* section of MSDS)

**Flammable liquid:** flashpoint = 100° F. **Flammable solid:** liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or which can be ignited readily and when ignited burns vigorously

**Corrosive:** Causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

**Reactive:** May become unstable or contact with water produces flammable or toxic gas.

**Temperature Sensitive:** Must be kept within a certain temperature range to ensure stability.

**Unstable:** substance will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shock, or high or elevated pressure or temperature. Also includes time-sensitive materials, particularly those that produce peroxides over time.

**Incompatibilities:** list chemicals or materials that might cause instability or adverse conditions if mixed with the particularly hazardous substance(s).

**Inhalation:** inhalation of the substance may cause adverse health effects.

**Skin exposure:** substance is readily absorbed through the skin or can cause significant damage to skin upon contact.

**Sensitizer:** certain chemicals are known to effect the immune system, causing a person to experience allergic reactions, up to and including anaphylactic shock, upon exposure to the chemical, after the initial sensitization.

Some chemicals can accumulate in body tissues and may require initial or periodic medical surveillance. Contact Environment, Health & Safety for more information.

## Procedure

Briefly describe the part of the experimental procedure that involves the substance, with particular attention to how the chemical will be manipulated. Vacuum systems include central vacuum systems and vacuum pumps within the lab. Describe what will be done to ensure that the substance is not accidentally drawn into the vacuum system. Cold traps or filters are some examples of such measures. PHA administered to animals may pose a hazard to animal handlers via contact with excreta and metabolites, note any special precautions.

## Exposure Controls

**Safety glasses** protect from flying particles and minor chemical splashes, for instance, from opening a centrifuge tube.

**Chemical splash goggles** should be worn when there is a possibility of a significant chemical splash. Most chemical manipulations,

particularly where pressure is involved, warrant chemical splash goggles.

**Face shield**, worn with splash goggles, provides full face protection when working with large volumes of chemicals.

**Gloves** should be worn when working with any particularly hazardous substance. Since not all gloves offer significant protection from every chemical, it is important to choose the glove that offers the best resistance. See the MSDS, the [Environment, Health & Safety web page](#) or glove manufacturer compatibility charts for more information.

**Lab coats** should be worn when working with hazardous substances. The coat should not be worn outside the laboratory and should be laundered separately from other clothing.

**Aprons** offer chemical resistance and protection from splashes and can be used in conjunction with a lab coat.

**Respirators** offer protection from inhalation of substances when engineering controls are not sufficient. However, use of respirators must be approved by EH&S. Contact Environment, Health & Safety at 265-5000 if you believe a respirator is needed.

**Self-Contained Breathing Apparatus** (SCBA) users must be approved by Safety and must attend training at least annually. Contact EH&S at 265-5000 for more information.

A **fume hood** should be used for chemicals that may produce vapors, mists, or fumes, or if the procedure may cause generation of aerosols. The hood must have an average face velocity of between 95 and 125 feet per minute. This measurement is noted on the hood survey sticker. If the hood has not been inspected within the past year, contact EH&S at 265-5000 for re-inspection before using the hood. A **glove box** should be used if protection from atmospheric moisture or oxygen is needed or when a fume hood may not provide adequate protection from exposure to the substance; e.g., a protection factor of 10,000 or more is needed. Highly toxic gases must be used and stored in a **vented gas cabinet** connected to a laboratory exhaust system. Gas feed lines operating above atmospheric pressure must use coaxial tubing.

## Location/Designated Area

Building and room number where the substance will be used. Describe where in this room the substance will be used. For example, in a hood, on a specific benchtop, in several areas of the laboratory, etc. This room or area must be posted with a *Designated Area* sticker available through EH&S or your department's Chemical Hygiene Officer. Describe where the substance will be stored. Be specific, e.g., on a shelf, in a refrigerator, in a hood, etc. **Double containment** means that the container will be placed inside another container that is capable of holding the contents in the event of a leak and provides a protective outer covering in the event of contamination of the primary container.

## Spills, Decontamination and Waste Disposal

Describe how the work area will be decontaminated after use, in the event of a spill, or upon completion of the work and before removal of the designated area signage. Some corrosive chemicals may be neutralized before disposal via the drain or the hazardous waste program. Some materials, such as ethidium bromide, can be chemically deactivated before disposal via the drain or the hazardous waste program. See the Safety web page for more information about the hazardous waste program. Particularly hazardous substances must not be poured down the drain without consulting EH&S.

**For help in determining whether a substance meets the PHS criteria, call Environment, Health & Safety at x5-5000.**