

Principal Investigator: _____

Date Approved: _____

Novel Chemicals with Unknown Hazards

Cutting-edge research may often involve the creation and/or use of novel chemicals and materials. In many cases, the hazards of these novel materials can be anticipated based on what is known about similar, established materials. In such cases, it's prudent to presume that a derivative is at least as hazardous as its parent compound, and to take similar precautions when storing and/or handling it.

In all cases, a material with unknown hazards should be presumed to be hazardous until reasonably foreseeable health and/or physical hazards can be ruled out experimentally.



Personal Protective Equipment & Personnel Monitoring

Lab Coat	Gloves	Eye Protection
Traditional lab coat or flame-resistant lab coat when working with materials believed to be flammable.	Nitrile or neoprene gloves typically provide adequate protection against minor splashes. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.	ANSI Z87.1-compliant safety glasses or goggles if a splash hazard is present. A face shield and blast shield may be advisable if the material is reasonably anticipated to be potentially explosive.

Labeling & Storage

Store in secondary containment in a cool, dry place away from other materials that are reasonably anticipated to be chemically incompatible. If the material is anticipated to be a potential explosive, it must be stored away from light in an explosion-proof refrigerator/freezer or an explosion-proof cabinet. Each container's label must include any appropriate pictograms and identify the material as hazardous. Containers of these materials should be stored in leak-proof secondary containment. If the material is reasonably anticipated to be acutely toxic, carcinogenic, or a reproductive toxicant, it must also be stored within a designated area. Also, if not plainly visible (e.g. through a cabinet window),

labeling must be applied to storage locations where these are stored to avoid an inadvertent encounter.

Engineering Controls, Equipment, & Materials

Fume Hood

It is advisable to use a fume hood when working with these materials. If your protocol does not permit the handling of such materials in a fume hood, contact EH&S to determine whether additional respiratory protection is warranted.

Blast Shield

When working with novel compounds which may be potentially explosive, the use of a portable blast shield inside the fume hood is highly recommended.

Housekeeping

Spills

Treat all spills of these materials as a major spill. Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred. Call 911 and alert TWU DPS (940-898-2911 in Denton; 214-689-6666 in Dallas; 832-870-6128 in Houston). Report any exposure to EH&S at 940-898-4001. Remain on-site (at a safe distance) to provide detailed information to first responders.

Decontamination

Decontamination methods will vary based on the materials handled and equipment being used. Please review the chemical Safety Data Sheet for guidance on cleaning materials.

Waste

Refer to the TWU Chemical Hygiene Plan for details. Please note that some carcinogens and acute toxicants may be considered Extremely Hazardous when disposed of as waste.

First Aid & Emergencies

Skin Contact

Immediately remove contaminated clothing and accessories; flush the skin with water for at least 15 minutes. Seek medical attention immediately.

Eye Contact

Check for and remove contact lenses. Immediately flush eyes with water for at least 15 minutes. Seek medical attention immediately.

Inhalation

Move affected individual(s) into fresh air. Seek medical attention immediately.

Ingestion

Seek medical attention immediately.



Standard Operating Procedure Novel Chemicals with Unknown Hazards

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