




Principal Investigator: \_\_\_\_\_

Date Approved: \_\_\_\_\_

## Water Reactive Chemicals

Water reactive chemicals are materials that may react violently with aqueous solutions or atmospheric moisture to produce a flammable or toxic gas and heat. Typical gases produced are: H<sub>2</sub>, CH<sub>4</sub>, and other low molecular weight hydrocarbons.



Personal Protective Equipment & Personnel Monitoring		
 <b>Lab Coat</b>	 <b>Gloves</b>	 <b>Eye Protection</b>
Flame-resistant lab coat.	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.

## Labeling & Storage

Store in secondary containment in a dry place away from moisture/humidity, heat sources, and any other materials that may be chemically incompatible. It is advisable to store water reactive materials inside of a desiccator or glove box. Mineral oil can be used to help keep alkali metals and metal hydrides dry. Labels identifying the materials as Water Reactive must appear on the bottles and secondary containers. 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

### Glove Box

Work under an inert atmosphere (e.g. argon, nitrogen) in a glove box.

### Fume Hood

If a glove box is unavailable or impractical, work in a chemical fume hood away from any water sources. 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.

## Housekeeping

### *Spills*

Treat all spills of this material 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*

Avoid using water. Please review the chemical Safety Data Sheet for guidance on cleaning materials.

### *Waste*

Water reactive materials are often quenched before disposal, though this is not generally a requirement of TWU's Hazardous Waste Management Program. Refer to the TWU Chemical Hygiene Plan for details.

## First Aid & Emergencies

### *Fire*

**DO NOT** use water to put out fire. Instead, use a dry chemical or Class D fire extinguisher.

### *Skin Contact*

Immediately remove contaminated clothing and accessories. Flush the affected area 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. If symptoms persist, seek medical attention.

### *Ingestion*

Seek medical attention immediately.

By signing and dating the log below, individuals are certifying that they have been informed and understand this Standard Operating Procedure and agree to abide by its contents.

Name	Signature	Date