

## Pyrophoric and Water Reactive

### Hazard Description

When these liquids or solids come into contact with air or water they either spontaneously ignite or react violently. Any handling of pyrophore/water reactive material is high risk and must be controlled with adequate system design, direct supervision, and training. Note that when working with metal dust, the smaller the particle size, the greater the hazard. Many metals are also toxic.



### Examples

- Lithium
- Potassium metals
- Sodium borohydride
- Zinc dust
- Alkyl lithium solutions

### Handling

- Always wear a fire-retardant lab coat, face shield and safety glasses at a minimum when working with explosive materials. Read SDS for additional PPE requirements.
- Do not return unused material to the original container as it may contain impurities that can cause fire or explosion.
- Chemicals of this nature should be used in an inert environment (glovebox/bag) to prevent air/moisture exposure.

### Storage

- Only minimal amounts of reactive chemicals should be stored.
- Must be stored in their own cabinet.
- Store in cool, dry place, away from flammables.
- Rigorously avoid exposure to water and air.

### Hazardous Waste

- Must be disposed of as per the [University's Hazardous Waste Standard](#).
- Water or air reactive materials should not be mixed. They should be packaged individually in inerting or stabilizing substance.
- Solid alkali metals should be immersed in mineral oil prior to bringing it to the ESF for disposal. Contact [esf@uwaterloo.ca](mailto:esf@uwaterloo.ca).