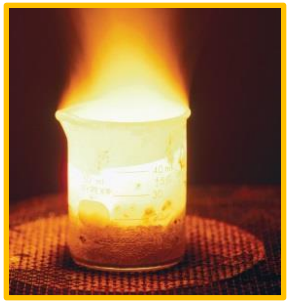
Working With Air & Water Reactive Chemicals

EHS ENVIRONMENTAL HEALTH AND SAFETY

Air/water reactive chemicals are materials that may oxidize, decompose or otherwise react violently in the presence of air or moisture. These reactive chemicals must be handled very carefully to avoid serious injury.



ALWAYS CONSULT THE SAFETY DATA SHEET FOR THE SPECIFIC CHEMICAL BEFORE USING IT

Storage

All chemicals should be stored as per the SDS instructions.

- ✓ Store in strong glass or steel containers under inert atmosphere.
- ✓ Avoid exposure to light, air, and heat.
- ✓ Keep away from sources of ignition.
- ✓ Avoid contact with oxidizing materials, and powdered metallic oxides.
- ✓ Store container in a cool, dry, and well-ventilated area.

Safety Precautions

1. Know the emergency procedures including the location of the nearest emergency shower and eyewash station
2. Wear appropriate Personal Protective Equipment.
3. Only buy and store small quantities.
4. Handle sensitive chemicals in airtight systems, such as glove boxes filled with inert gas
5. Never return unused quantities of air or water sensitive materials to the original container.
6. Wash hands thoroughly with soap and water after handling.
7. Utilize proper technique for transferring sensitive chemical (e.g the double-tipped needle transfer for pyrophoric liquids).

Spills

All spills involving air or water reactive chemicals are considered emergency situations. Evacuate the area and call the Department of University Safety at ext. 4444.

- ✓ If it is safe to do so, cover the spill with inert sorbent material.

In case of a spill, evacuate immediately and call University Safety at ext. 4444

Disposal

1. NEVER expose residual materials to the atmosphere. All residual material must be utilized in chemical reaction prior to disposal of the container.
2. Empty containers should be triple-rinse with inert solvent.
3. Rinse solvent must then be neutralized or hydrolyzed.
4. After the rinse is complete, the container can be opened to the atmosphere and left at the back of a fume hood for at least a week.
5. Finally, the container must be triple-rinsed with water again before disposal.

Examples of Water Reactives	Examples Of Pyrophoric Chemicals
Sodium metal	Metal alkyls and aryls
Other metal Hydrides	Metal carbonyls
Metal amides	Alkali metals (Na, K, white phosphorus)
Metal alkyls and aryls	Metal hydrides (LiAlH4, NaH, KH)

Additional Information

Contact Environmental Health and Safety at ehs@carleton.ca or ext. 3000