

**October 2001**  
**Revised: September 2007**

A number of common laboratory chemicals can become dangerous and result in bodily harm or extensive property damage if not managed properly.

Proper management can reduce the risk of explosion.

Deactivation services provided by a specialty contractor are recharged to the associated Laboratory personnel.

University of Washington  
 Environmental Health and Safety  
 Box 354110  
[www.ehs.washington.edu](http://www.ehs.washington.edu)

## Nitrated Compounds

### CHARACTERISTICS

Nitrated compounds constitute a class of chemical substances that can be explosive. The appearance of nitrated compounds may vary from a fine moist crystalline solid to clear viscous liquids. A few nitrated compounds can become shock sensitive or can react with certain metals to form extremely unstable shock sensitive compounds. Shock sensitive chemicals can spontaneously release of energy when subject to shock through bumping, friction, agitation, or heating. The energy released can be thermal and/or physical. When detonated in an uncontrolled or unexpected circumstance, some nitrated compounds can result in serious bodily harm and/or extensive property damage.

### INVENTORY MANAGEMENT

Many nitrated compound solids can become explosive when dehydrated; however, most are not shock sensitive when dehydrated. Purchase containers with phenolic resin caps. Upon receipt of a nitrated compound, obtain a Material Safety Data Sheet and review the hazards and manufacturer's handling recommendations. Do not break the seal on the container until the product is needed. Label it with the date it is first opened. Maintain the manufacturers suggested level of hydration: Picric acid wetted with not less than 30% water by mass, Nitrocellulose with water with not less than 25% water by mass, and Dinitroresorcinol wetted with not less than 15% water, by mass.

### HANDLING PRACTICES

Visually inspect the container for problems prior to each use. After each use, take care to wipe down the bottle neck, cap, and threads with a wet cloth before resealing. Thoroughly clean and rinse any secondary containers used immediately following the procedure. It is important to understand the chemistry of nitrated compounds. If there is a chance of an explosive reaction, conduct the operation behind a blast shield. If it does not interfere with the use of the material, it is best to add enough water to fully immerse the product. Visually inspect the container on a periodic basis, at least every three months. Add deionized water as needed to maintain the wetted condition.

### DISPOSAL

Complete a Chemical Waste Collection Request Form and submit it to EH&S at Box 354110 or FAX to 206-685-2915 for stable or unstable items. The form is at <http://www.ehs.washington.edu/forms/epo/1470.pdf>.

Unstable items require special handling and are above the baseline services provided by EH&S. The fee is charged back to the laboratory requiring the service. Thus it is important to manage these materials carefully in order to both protect your safety and to save your financial resources.

### **Waste Collection Zones**

Zone 0	Offsite Locations	206-685-2849
Zone 1	Upper Campus	206-616-0587
Zone 2	UWMC	206-616-0586
Zone 3	HSB/South Campus	206-685-3200
Zone 4	HMC	206-543-2931