

## Using Ether Safely

Diethyl ether, also known simply as 'ether' has been used as an anesthetic and reagent since the 1840's. Ether is a volatile liquid at room temperature, with a boiling point of 95 degrees F (35 degrees C). Because ether is extremely flammable with a very low flash point and a wide flammable range, the use of substitute materials is encouraged. Ether, as well as structurally similar materials, tetrahydrofuran, isopropyl ether, dioxane and others (see Appendix B of the Chemical Safety and Waste Management Manual) can react with oxygen in the atmosphere to form explosive peroxides.

### **Anesthesia:**

Here at UAB, the Animal Resources Program strongly discourages the use of ether as an animal anesthetic. Other methods that are less hazardous are recommended. If you need more information on animal anesthesia, please contact ARP at 934-3553. Ether is no longer used as an anesthetic agent in humans.

### **Precautions:**

The use of ether as a reagent for numerous chemical reactions and procedures is not restricted although care must be taken to avoid fire and explosion. The following precautions should minimize the risk of injury or property damage when using ether:

- Use the smallest amount of ether possible. Purchase an amount that can be used within one year (or less).
- Date containers when they are received and when they are opened.
- Dispose of open containers through the chemical waste manifesting system (see section 11 of the CSWMM) 6 months after opening.
- Dispose of unopened containers of ether 12 months after receipt.
- Never distill ether to dryness; there is a risk of explosion!
- Do not store ether, or other flammables in regular refrigerators.

### **Personal Protection:**

- Wear a lab coat, nitrile or neoprene gloves and eye protection when working with ether.
- Work away from flames, hot plates or other hot surfaces that could ignite the vapors.
- Conduct work with ether in certified chemical fume hood.
- If a spill occurs, follow the spill clean up procedure in the CSWMM.

Peroxide test strips are available from Fisher Scientific. Stored ether can be tested for the presence of peroxides, although cans open for six months or more should be disposed of properly. Never attempt to open rusty or damaged containers since there may be explosive peroxides under the cap that could detonate from the friction of opening the can! If you have any questions regarding the use or disposal of ether, please contact Occupational Health & Safety at 934-2487.