Laboratory Glassware Safety

Hazard: Cuts from damaged or broken glass

Laboratory glassware comes in all shapes and sizes of vessel, flask, bottle, container, tubing, etc. and is used in various applications. Cuts from damaged or broken glass can include:

- Cuts from forcing plastic or rubber tubing, bulbs or rubber bungos onto glass tubing, pipettes or condensers that break.
- Cuts from broken glass and other sharp items during cleanup.
- Cuts from broken glass improperly disposed of in ordinary waste bins.
- Cuts from flying glass due to explosion or implosion following pressurization or evacuation.
- Cuts from broken/flying glass following breakage due to impact or thermal shock.

Checklist for Preventing Laboratory Glassware Injuries

☐ Verify all personnel who work with laboratory glassware have received training. A documented review of this fact sheet and any manufacture specific glassware handling requirements (i.e. SIGMA ALDRICH GUIDE, Corning Guide) will be sufficient for training. For additional information, please review the University’s Chemical Hygiene Plan and/or contact EH&S to schedule a classroom training session.

☐ Before use, check that all glassware is free from cracks, flaws or scratches that may cause it to fail in use. Dispose of damaged glassware or send to the Aldrich Glass Shop for repair.

☐ Hold beakers, bottles, flasks and other pieces of glassware by the sides and bottoms rather than by the tops. The rims or necks of these items may break if used as a lifting point.

☐ Avoid carrying glassware by hand; use a suitable container.

☐ Avoid trying to catch falling glassware.

☐ Use a brush and dustpan to clean up broken glass. Be especially careful when cleaning broken glass from a sink where water can make sharp edges difficult to see. Use tongs or forceps or pads of disposable paper towels to pick out pieces.

☐ Dispose of glass “sharps” in special containers used solely for this purpose and labeled appropriately. Do not overfill. Do not dispose of broken glass in the ordinary waste bins.

☐ Where possible make use of SafetyBarbs, pre-drilled bungs/stoppers.

☐ Fire polish or file the ends of all glass tubing and rods with a Microtorch to remove cutting edges before inserting into bungs/stoppers.

☐ Protect hands with cut-resistant gloves, a towel or tubing holder when inserting glass tubing into bungs/stoppers. Lubricate the tubing and stopper with water or glycerol. Keep hands on tubing close to the stopper and out of line with end of the tube. Do not use excessive force; NEVER push with the palm of the hand.

☐ When fitting plastic or rubber tubing to glassware, lubricate the glass with water or glycerol and soften the ends of plastic tubing by brief immersion in hot water.

☐ Do not use excessive force. Do not exert force in a direction that will make the glass snap. Think about where the sharp edge of the glass might go if it does break and arrange your grip accordingly. Wrap the glass in a towel or thick layers of paper tissue. Reduce the leverage on pipettes by holding them near the end when fitting fillers. When removing plastic tubing, cut off tubing that does not yield to gentle pressure.