



This form is to be used in conjunction with the Environment Health and Safety Manual Procedure 3.2 Hazard Identification, Assessment and Control - Application.

Information of Activity

Activity: Use of glassware Location: Chemistry
 Identified by: G. Papadopoulos Date: 31/1/06
 Identified Hazard / Aspect: Personal injury caused from broken or breaking glass

Risk Analysis matrix – level of risk

| Identified Hazards | Risk Assessment | | | Risk Score | Risk Level |
|---|-----------------|----------------|-----------------|------------|------------|
| | Exposure (E) | Likelihood (L) | Consequence (C) | E x L x C | |
| Injury from flying glass imploding (under vacuum) | 3 | 0.3 | 5 | 4.5 | M |
| Cuts from forcing plastic tubing, teats or rubber bungs onto glass tubing, pipettes or condensers that break. | 3 | 0.3 | 5 | 4.5 | M |
| Cuts from damaged or broken glass | 2 | 0.3 | 2 | 1.2 | L |
| Exposure to chemicals following cuts by contaminated glassware | 2 | 0.3 | 5 | 3 | M |

Definitions

| Exposure | E | Likelihood | L | Consequence | C | Risk Score | Hierarchy of Risk Controls |
|--------------|----|----------------|------|---------------|----|---|---|
| Continuously | 10 | Almost Certain | 1.0 | Catastrophic | 20 | E >20 H >10 M 3-10 | Elimination is a permanent solution and should be attempted in the first instance. Substitution involves replacing the hazard or environmental aspect by one of lower risk. Engineering controls involve physical barriers or structural changes to the environment or process. Administrative controls reduce hazard by altering procedures and providing instructions. Personal protective equipment last resort or temporary control. |
| Frequently | 6 | Likely | 0.6 | Major | 10 | | |
| Occasionally | 3 | Possible | 0.3 | Moderate | 5 | | |
| Infrequently | 2 | Unlikely | 0.1 | Minor | 2 | L < 3 | |
| Rarely | 1 | Rare | 0.05 | Insignificant | 1 | | |

LEGEND

E: extreme/significant risk; immediate action required; must be managed by senior management with a detailed plan, notify RMO immediately.
 H: high risk, senior management attention needed, detailed research and management planning at senior levels
 M: moderate risk, management responsibility must be specified; manage by specific monitoring or response procedures
 L: low risk, manage by routine procedures; unlikely to need specific allocation of resources

Details of Risk Controls to be Taken

Risk Controls: (These should be determined by both the person(s) identifying the risk and the responsible manager and HSR or Environmental Representative). When determining risk controls refer to Hierarchy of Risk Control. Some examples are operating manuals, safe work procedures, licenses, permits to work, training and instruction etc

Glass cuts are the major source of injury in the School of Chemistry. Extra care is required when handling glassware.

Before use, all glassware should be checked to ensure that it is free from cracks, flaws or scratches that may cause it to fail in use.



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When fitting tubing to glassware, glass may be lubricated with water or glycerol and the plastic tubing softened by brief immersion in hot water. Excessive force must not be used or force in a direction which will make the glass snap. Thought should be given as to where the sharp edge of the glass might go if it does break and the grip arranged accordingly. The glass may be wrapped in a towel or thick layers of paper tissue. When tubing is being removed, a sharp knife can be used to cut off tubing that does not yield to gentle pressure.

Hot glass, which looks the same as cool glass, should be treated with care and placed where no one can accidentally come into contact with it before it has cooled.

Ground glass connections should be lubricated before assembling and disassembled immediately after use.

Damaged glassware should be repaired or disposed of in the "Broken Glass" bin and not the ordinary waste-bins. A brush and dustpan should be used to clear up broken glass. Special care is needed when clearing broken glass from a sink where water can make sharp edges invisible. ie tongs or tweezers should be used to pick out pieces.

Glassware subjected to vacuum should be carefully inspected for flaws before use. For glassware under vacuum, volumes of 1 litre or larger should be enclosed in tape or plastic mesh to restrain fragments in the event of implosion. Only round bottom flasks should be used on rotary evaporators.

Safety Glasses or Face Shield and a lab coat should be worn. In some circumstances, e.g. when pressure is applied in fitting tubing to glass, leather gloves covering the wrists or towel or tissue padding may be required.

Person assessing the risk: G. Papadopoulos Date: 31/1/06

Authorised by: G. Papadopoulos Planned completion date:

Risk Control Measures Completed

Actions by: G. Papadopoulos Completed (Initials & date): 31/1/06