

ASSIST INFORMATION SHEET:

Lab glass and porcelain disposal – the ‘sharp end’ to disposing of broken glass and porcelain.

What is best practice for disposing of broken glass or porcelain in the laboratory? Should you wrap it before placing it in the bin? Is it a good idea to place it with general waste? What is the best practice and a safe way to dispose of broken or redundant lab glass?

Borosilicate, soda glass and porcelain laboratory equipment is inherently prone to breakage, chipping or cracking. A risk assessment will establish if glassware items can be substituted for plastic or other less fragile materials. If elimination or substitution is not possible, damaged or broken items should be replaced as soon as practicable and breakages disposed of with consideration to the following aspects.

For the purpose of this information sheet, fragile items such as mortar and pestles, evaporating basins, soda glass, Pasteur pipettes and microscope slides are referred to as glassware.

Safety and handling considerations

It is not advisable to use broken or chipped glassware in the laboratory and damaged items should be replaced as soon as practicable. It is preferable that an adult handle broken glass with consideration to a risk assessment for handling broken glassware.

Warn others that broken glass is in the area, cordon off the area and attend to any first aid required ensuring any resulting injuries are reported.

To minimise the risk of skin penetration or eye injuries, suitable PPE should be worn, such as safety glasses, lab coat, covered shoes and leather gloves.

Assess the risk of retrieving the broken glass – if it is in large pieces or several small pieces, should it be swept up or picked up with forceps? Are there hazardous liquids or solids associated with the broken glass? If so, consult the SDS for clean-up procedures before retrieving the glass.

Clean broken glass is laboratory glassware that is not contaminated with any biological or infectious material (human or animal blood; body fluids, parts or materials; microbiological materials), toxic, recombinant or radioactive substances or chemicals.

Ensure all labels and lids are removed prior to disposal.

Clean, broken glass may be collected into a dedicated, rigid and impenetrable container or bin that is clearly labelled ‘Clean Broken Glass’¹. Items should be placed **directly** into the bin, not passed hand to hand, wrapped or placed into a garbage bag.

Contaminated broken glass should be dealt with in the following manner:

- Small items (e.g. beaker < 500 ml) should be placed in sharps containers for collection and disposal by an approved contaminated waste contractor.
- Large items of broken glassware should be decontaminated before disposal.

- If contaminated with chemicals, safely extract fumes from glassware overnight in a fume cupboard and decontaminate appropriately. All labels and lids should be removed before placing into a 'Clean Broken Glass' receptacle for disposal into an industrial waste bin.
- **Glassware contaminated with hazardous materials, which cannot be decontaminated, should be disposed of as hazardous waste.**
- If contaminated with biological products or infectious materials, items should be autoclaved or disinfected to remove any contamination. All labels and lids should be removed before placing into a 'Clean Broken Glass' receptacle for disposal into an industrial waste bin.

In the event that contaminated broken glass becomes embedded in skin, a piece of the same glassware should be retained for comparison tests by a hospital.

UNDER NO CIRCUMSTANCES SHOULD THE CONTENTS OF SHARPS CONTAINERS (containing items such as scalpel blades) BE EMPTIED INTO GENERAL GARBAGE BINS OR INDUSTRIAL WASTE BINS, NOR BE EMPTIED and RE-USED².

Environmental considerations

Laboratory glass is not suitable for recycling³ as there may have been exposure to unknown contaminants such as chemicals or biological samples. When disposing of any broken glass ensure any contamination hazard is taken into account before disposal⁴.

Contaminated items should be treated prior to disposal, if it is possible to do so, or segregated into a separate suitable disposal receptacle if applicable. Segregation is on the basis of the primary hazard. If secondary hazards are present, then persons handling glass waste need to make an assessment as to whether further segregation is required in order to ensure that any secondary hazards associated with handling the waste are properly identified and controlled⁵.

School and local authority considerations

Processes within local government waste transfer stations differ between establishments and jurisdictions. Consult your state education authority and local government waste department for specific procedures for the removal of broken glass from your school. Discussions should include types of glass that can be disposed of, how the glass is to be placed in the bin, whether glass is to be wrapped, contained in labelled boxes or left visible. Further, ensure information sharing of these procedures with Heads of Science, teachers, laboratory technicians, teacher aides and cleaning staff.

¹ 'Laboratory safety', University of Sydney website, <http://www.uws.edu.au/whs/whs/labsafety> (Accessed April 2014)

² 'Laboratory safety', University of Sydney website, <http://www.uws.edu.au/whs/whs/labsafety> (Accessed April 2014)

³ 'Glass', SITA Australia website, <http://www.sita.com.au/community-education/site-tours-education/recycling-tips/glass/> (Accessed April 2014)

⁴ 'HS321 Laboratory hazardous waste disposal guideline', UNSW website, https://www.ohs.unsw.edu.au/hs_procedures_forms/guidelines/HS321_Laboratory_Hazardous_Waste_Disposal_Guideline.pdf 09/04/2013 (Accessed April 2014)

⁵ 'Laboratory safety', University of Sydney website, <http://www.uws.edu.au/whs/whs/labsafety> (Accessed April 2014)

Flow chart for laboratory glass and porcelain disposal

