Laboratory Glassware – Quick Tips

Glassware items are used throughout the laboratory industry. Pipettes, burettes, cylinders, flasks, beakers, test tubes and thermometers are just a few laboratory items which may be made out of glass. When mishandled, these items can result in workplace injuries. When substitution of non-glass laboratory products such as polymethylpentene (PMP), high-density polyethylene (HDPE), low-density polyethylene (LDPE), polycarbonate (PC), polytetrafluoroethylene and PTFE resin (Quick Tips #213: Types of Plastics) is not possible, special glassware handling provisions should be implemented.

Laboratory Glassware Selection

It's important to select laboratory glassware designed for its intended use. Extreme temperature or vacuum applications require specifically designed products. Vacuum system devices should have heavy walls to avoid breakage from high vacuum applications.

Borosilicate glass products such as Pyrex or Kimax brand should be selected for applications where temperatures can change rapidly. Extreme temperature changes can cause shattering of ordinary glassware.

Even when using the appropriate glassware, extreme caution should be used when working at extreme temperatures. Personal protective equipment such as insulated gloves and hot pads should be readily available for handling heated glassware.

Cleaning Laboratory Glassware

It is also important to keep laboratory glassware clean. Glassware should be cleaned with laboratory designed detergents (an example would be Tergajet or Solujet labware cleaning agents, or the Nalgene L900 cleaner). Clean as soon as possible to decrease the amount of buildup which makes cleaning more difficult. When using brushes, be careful to avoid damaging the surface of the glass product.

After washing glassware, be sure to rinse thoroughly to prevent contamination. It is not advised to towel dry, instead allow glassware to air dry. Inspect the surface to ensure it is free from any defects or particulate matter. Any glassware with chips, cracks or scratches should be removed from service and disposed of properly.

Glassware that is jammed together or frozen should be carefully released by someone wearing appropriate protective equipment such as cut-resistant gloves and goggles to prevent injuries. Two examples of frozen glassware are nested glassware that is stuck together and immovable stoppers.

Thermometers

When glass thermometers can not be substituted with temperature probes or resistance thermometers, it is suggested that they be alcohol filled instead of mercury filled. If mercury thermometers are used it is suggested that the thermometer be coated with PTFE resin.

Thermometer Protocol:

- Do not use a thermometer as a stirring rod
- Never shake down a thermometer
- Use caution when inserting or removing a thermometer from a rubber stopper
- Make sure you have selected the appropriate measuring range for your thermometer—overheating can cause breakage

Disposing of Laboratory Glassware

Defective glassware should be disposed of properly. Broken glassware should not be discarded with the regular trash. A separate container designed and labeled Deposit Glass Here. Do not attempt to pick up broken glass without using cut-resistant gloves and or a dust pan and broom.

Source

Thermo Scientific Nalgene