

Cleaning and Sterilization Guide to Plastic Labware

Scienceware® plastic labware is designed to provide many years of useful service under normal laboratory conditions. The physical properties and chemical resistance of the plastics used in the manufacture of Scienceware® plastic labware are provided for your convenience.

In addition, the following recommendations for cleaning and sterilization of plastic labware are designed to ensure their continuous, effective performance.



Cleaning:

1. Wash in a mild, non-alkaline detergent. We recommend the use of Bel-Art Aquet® Detergent F17094-series.
2. Next, rinse thoroughly in tap water.
3. Final rinse in distilled water to eliminate all traces of residue.
 - To avoid damage to plastic products, do not utilize abrasive materials such as cleansers or scouring pads. Polycarbonate (PC) items should not be exposed to strong alkaline cleaning agents, as these agents will cause crazing and cracking of the polycarbonate surface.
 - If ultrasonic cleaners are employed, avoid direct contact with transducer diaphragm. When special cleaning is necessary, such as the removal of grease or oil, organic solvents (e.g., acetone, alcohols) may be applied. Use these with caution, as more than brief exposure may affect the polyolefins. Rinse again thoroughly before use. For PS or PVC, only an alcohol-based solution should be utilized. Do not use organic solvents when cleaning acrylics.
 - To remove organic matter from plastic labware, sodium hypochlorite solutions (bleaches) are suggested. A cleaning agent made of chromic acid, though effective, will eventually cause plastic to become brittle.

Laboratory Washing Machines:

Laboratory washing machines are a convenient method of cleaning most types of plastics with the exception of low-density polyethylene, acrylic and polystyrene. Items manufactured of these plastics are adversely affected by the heat involved. In addition, the strength of polycarbonate (PC) will be weakened by repeated exposure to washers. Polycarbonate labware utilized in high stress situations should be washed by hand to ensure effective performance.

When laboratory washing machines are used, water temperature should be set at 57°C (135°F) maximum. To avoid damage or abrasion, labware should be weighted down so it stays firmly in place. Exposure to the metal spindles of the washers can be eliminated by covering them with plastic tubing.

Sterilization:

Always clean items and rinse thoroughly in distilled water prior to autoclaving. To avoid pressure build-up, set closures upon containers loosely without threading. Carboys and spigots should be autoclaved empty to prevent leakage. Autoclave at 121°C (250° F) for twenty minutes to ensure sterility. Ethylene-oxide or chemical disinfectants are recommended for PVC.

Chemical disinfectants such as benzalkonium chloride, formalin, ethanol, iodophor and quaternary ammonium compounds may be used. When choosing ethyleneoxide (ETO) gas sterilization, a seven to fourteen day quarantine period is necessary for the assurance of no ETO residue.

Microwaving:

All plastic materials allow transmission of microwaves; however, please refer to the Physical Properties Chart before using plastic containers in a microwave, as the contents in the plastic container may exceed the actual plastic container's heat resistance.