



## Cleaning

Beads can be reused about ten times. Soak them in a solution of lab detergent commonly used for glassware. Rinse the beads thoroughly and dry them overnight at 50 deg C in a glass or stainless steel tray. Beads can be autoclaved or baked, if desired. If you want to be sure your beads are free of all nucleic acids or nucleases, soak the beads for 5 minutes in a 1:10 dilution of ordinary household bleach solution.

Do not let a "dirty" chamber sit around. Residual cell homogenate is remarkably corrosive and will lead to jamming and leaking of the chamber. Hand wash the plastic rotor assembly and chamber promptly. Also see cleaning details below...

## Things Not To Do

- Do Not fill the polycarbonate chamber more than  $\frac{3}{4}$  full with glass or ceramic beads. Sample heating will be excessive and the motor may burn out. On the other hand, the chamber must be at least  $\frac{1}{2}$  full of beads in order to get good cell disruption.
- Do Not use beads larger than 2.5 mm diameter with the Large Chamber nor larger than 1mm diameter with the 15 ml or 50 ml Small Chamber. Steel beads cannot be used - they are too heavy to be agitated.
- Do Not use larger vessels (Mason jars, etc.) with the BeadBeater. These containers will not achieve good homogenization and, if made of glass, may break and cause injury. BioSpec Products has extensive experience with the use of continuous bead-mills capable of processing multi-liter quantities of cell suspension. We would be happy to share our experience with you.
- Do Not use flammable solvents in the chamber. The polycarbonate plastics in the chamber may be attacked. Furthermore, sparks from the BeadBeater motor might ignite leaking solvent or fumes.

## Cleaning BeadBeater Chambers

Empty the beads from the chamber into a labware detergent solution. They can be reused many times. Prompt washing of the chamber will remove corrosive biomaterials that can attack the metal parts of the BB chamber.

Here is a method for thorough cleaning of BeadBeater chambers. It takes a minute or so more than simply washing out the intact chamber but will assure that the chamber components last

longer. The rotor/shaft part of the BB homogenization chamber is temporarily removed from its black plastic bushing unit. In doing so, you will be able to remove any glass fragments that might have worked their way into the shaft and bushing area.

1. Holding the white Teflon rotor with your fingers so that it cannot rotate. Invert the chamber and unscrew the black rubber clutch (the six toothed engaging wheel which mates to a similar clutch on the motor shaft). The shaft has a left-handed screw thread, so push on the slanted side of the teeth on the clutch (i.e. turn clockwise). -- Hopefully the clutch will come off without much effort. We apply silicone grease to the clutch threads on assembly, but if the enhanced cleaning procedure is not done soon after receiving a "new" unit, it soon becomes impossible to unscrew the clutch.
2. Remove the gray fiber washer. When reassembling the chamber, this washer must be positioned completely over the shaft of the rotor/shaft assembly before screwing on the clutch.
3. Now you can lift out the rotor/shaft assembly out of the bushing unit. Clean everything using a detergent solution, rinse with water, blot dry and reassemble. It is only necessary to "finger-tighten" the black rubber clutch. About every tenth time, put a light coat of silicone grease on the threads of the shaft which engage the clutch and lubricate the bronze bushing in the center of the black plastic bushing unit with a single drop of mineral oil. Mineral oil is inert and will not contaminate your biopreparation.