RPI RESEARCH PRODUCTS INTERNATIONAL

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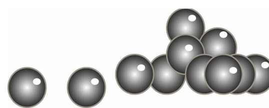
ISO 9001:2008 CERTIFIED
GOOD MANUFACTURING PRACTICE GMP
Serving Science since 1970

Disruption Beads

- Homogenize & grind samples
- Ideal for bacteria, yeast, algae, cells, tissues



RPI No.	Sample	Bead Type	Dia.	Qty
9830	Bacteria	Glass	0.1mm	1 lb.
9831	Yeast / Fungi	Glass	0.5mm	1 lb
9832	Tissue	Glass	1.0mm	1 lb
9833	Tissue/Spores	Zirconia/Silica	0.1mm	1 lb
9834	Tissue/Spores	Zirconia/Silica	0.5mm	1 lb
9835	Tissue/Spores	Zirconia/Silica	1.0mm	1 lb
9836	Tissue/Spores	Zirconia/Silica	2.3mm	1 lb
9837	Skin/Soft Plant Tissue	Zirconia/Silica	2.0mm	1 lb
9838	Skin/Soft Plant Tissue	Zirconia/Silica	2.3mm	1 lb
9840	Fibrous Plant Tissue	Chrome Steel	3.2mm	1 lb

Cleaning Your Beads

In most cases, cleaning new glass or ceramic bead media is unnecessary. The only contaminate - carbon black - is so inert that its presence in your prep has no effect. And, it is soon removed upon centrifugation or filtration in the steps that usually follow cell disruption. Do not acid wash beads, it is not necessary.

Clean used beads by soaking overnight in a solution of laboratory detergent. Then rinse away all detergent with several changes of tap water and then with RO- or distilled water. Dry the beads in an open stainless steel or glass tray at 40 to 70°C. If the dried beads do not pour freely (i.e. they are caked together), then they were not cleaned or rinsed well enough. Repeat the cleaning protocol.

Chrome steel or stainless steel beads requires a modified procedure: The washing step must be short - lasting only a few minutes. Same for the water rinse. Then, promptly remove all water from the surface of the beads by washing the beads with three changes of absolute (100%) ethanol, pure (100%) isopropanol or acetone. Air dry at RT or in a warm oven to flash evaporate the solvent.

If you are isolating nucleic acids from disrupted cells, beads can be soaked in a 1:10 dilution of ordinary household bleach (Clorox® or equivalent) for 5 minutes. This not only cleans and sterilizes the beads, but completely destroys contaminating nucleic acids. Biotechniques, Vol 12, 358-360 (1992).

All beads can be autoclaved with steam, once cleaned. Note a recent report in Biotechniques (Vol.55, Issue 6,p.296-299, Dec 2013): "Autoclaving at standard conditions (121° C for 20 min) does not sufficiently remove the template activity of contaminating DNA. Autoclaving at 121° C for 80 min is recommended. The presence of air during auto-claving also facilitates nucleic acid decomposition."

Finally, a successful procedure to sterilize and also destroy any residual nucleic acids on clean glass, ceramic or steel beads is baking the beads at 550° F for 2h or 400° F for 4 h.

You can reuse beads about ten times before they wear down to an unusable size.