Chemglass Life Sciences

Quick Start Guide

Lab Armor® Beads are eco-friendly and low-maintenance metallic beads that can replace water in existing water baths, aluminum blocks in dry baths and even ice in ice buckets. The innovative Lab Armor Beads can also be used in containers placed in ovens and incubators to replace sample racks.

Beads are incredibly convenient, stay dry and protected from water-borne microbial contaminants. Use this guide to help upgrade your entire lab experince with Lab Armor Beads.

Equipment Compatibility

Lab Armor Beads can be used in most general-purpose water baths and dry baths with exposed or recessed heating elements that are centrally located.

Beads are not recommended for use in the following;

- Shaking Baths
- Circulating Baths
- Baths with Float Switches
- Shallow Baths < 5 in or 13 cm
- Deep Baths > 8 in or 20 cm

Learn more from the water bath compatibility video at www.labarmor.com/videos

Preparation & Setup

Steps for preparing your water bath for Beads;

1. Power off the bath
2. Unplug the bath
3. Pour out any water
4. Clean the bath
5. Allow bath to dry
6. Fill the bath with Beads
7. Fill to 1.5 in or 4 cm from top
8. Plug in the bath
9. Power on bath
10. Set to desired temperature

Allow the Beads to equilibrate overnight, or after 5 to 10 minutes you can periodically stir the Beads briskly with a stir rod and allow the bath to equilibrate over 2 to 5 hours.

Maintenance & Cleaning

Lab Armor Beads are easy to keep clean with a spray application of 70% ethanol every few weeks.

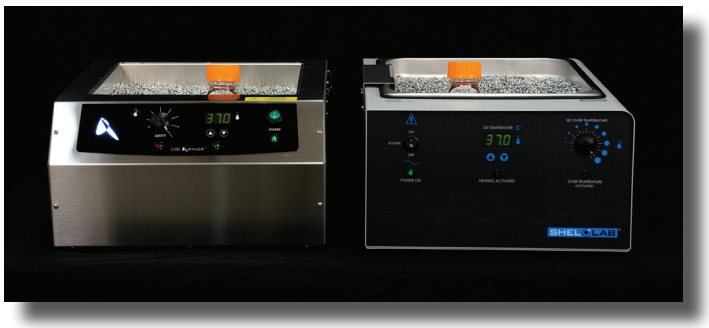
Steps for cleaning spills;

1. Scoop out Beads
2. Wash with mild dish detergent
3. Clean with water
4. Spray with 70% ethanol
5. Dry beads completely

Avoid using strong acids, bases, including bleach solutions and other strong corrosive detergents. Do not autoclave the Beads.

The end user should determine the specific cleaning and preventative maintenance protocol based on the type of lab, application, and materials being handled.

Learn more from the video at www.labarmor.com/videos



Best Practice Recommendations

Keep the Bead Bath powered on except when performing maintenance. It's important to keep the Beads dry at all times, however natural condensation on cold vessels will not harm the Beads.

Temperature Gradients

When a frozen vessel is placed into a Bead Bath the surrounding beads become temporarily cooled. If the vessel is large enough, just like a water bath, the overall temperature of the Bead Bath will decrease slightly below the set point and trigger the bath to begin heating. The cool areas surrounding the vessel will slowly warm up until the vessel reaches the set temperature. Similar gradients are produced in the water bath. In general, the entire water bath cools down and rewarms without obvious gradients because the water is naturally circulating.

Samples are better protected when using Lab Armor beads because the thermal mass of beads resist temperature change better and unlike a water bath your samples are protected. Instead of always stirring the Bead Bath, you can most likely improve the temperature gradient by changing protocol.

Warming & Thawing

Plan for longer warming or thawing times with a Bead Bath. Warming of cold or frozen vessels may take 1.5 to 2.5 times longer in a Bead Bath than a water bath depending on the size of the vessel. For precision applications, you should validate old water bath protocols to avoid under- or over-heating samples.

Use a Lab Armor® Bead Bath™ for incubation above 50°C up to 80ºC to avoid uneven temperature gradients typical of most conventional water baths. Lab Armor Beads also work in other instruments including freezers, refrigerators, ice buckets and ovens at temperatures from -80°C to 180°C.

For thawing applications, there are two possible methods for reducing incubation times. Bring frozen vessels to 4°C in a refrigerator, or just prior to immediate use, bring the sample to room temperature on the bench-top before placing it in the Beads.

When possible, fully submerge vessels in the beads. Periodically agitate larger cold vessels and relocate to warmer zones in the Bead bath.

Learn more from the videos at
www.labarmor.com/videos

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