Bath Beads

Never wash or refill a water bath again!
Replace water in your water bath with these thermally efficient beads that hold tubes and other vessels in place without the need for racks or other accessories.

Product description

A dry, metallic, thermal media comprising of small, metal beads for replacing water in a water bath, blocks in a dry block bath or ice in ice buckets.

The result is a dry bath that is less prone to contamination and requires less maintenance than a water-filled bath. Bath beads eliminates water bath maintenance such as emptying, cleaning, monitoring, and refilling the water bath, as well as the need for racks, floats and bottleneck weights.

Features

- Compatible with standard constant temperature water baths
- Compatible with a broad temperature range from -100 °C to 400 °C
- Transfers dry heat or dry cold with high efficiency
- Accepts and supports any size and shape of vessel, including 96-well plates, dishes, and other non-water- tight vessels
- Washes and disinfects easily. Autoclavable.
- Eco-friendly! Energy-efficient and reduces your water consumption

Hints and tips during use

- Clean any spills with soap and water. Ensure the beads are completely dry before returning to the bath
- Disinfect periodically
- If possible, use a mesh bag when autoclaving; the beads come out of the autoclave hot so this speeds up the drying off process
- Always use clean gloves when handling the beads to avoid cross-contamination
- Avoid using strong acids, bases, including bleach solutions, and detergents

VALIDATION FOR SPECIFIC APPLICATIONS

Although Bath Beads provide a more stable environment and constant temperature than water, they do, in general, transfer heat more slowly. For applications involving large (500 ml) or frozen vessels, incubation in Beads may take up to 2–3 times longer, so optimizing the bath might be required. The goal is to reproduce the conditions of the original experiment performed in a standard water-filled bath.

Conditions

For most applications, optimization is not required, but in order to determine if bath optimization or protocol adjustments are necessary for a given application, first compare performance in both water and beads. Once a protocol is validated, in order to ensure reproducibility, always keep the established conditions constant between experiments for a given application.

1. Stir Beads briefly before use by turning over from bottom to top. In a typical bath, the temperature will remain uniform for up to 8 or more hours.
2. Most vessels can be buried or completely submerged into the beads, which will eliminate internal temperature gradients and prevent the formation of condensation under the lid.
3. It is important to keep the bath covered whenever possible. Reducing airflow allows for maximum temperature range and helps maintain optimal temperature uniformity.

For warming frozen reagents or larger refrigerated vessels such as 500 ml tissue culture media bottles, whenever possible, first bring the vessel to room temperature prior to placement in the bead bath. Eg, tissue culture media can be brought to room temperature by allowing the bottle to rest on the bench or in a sterile cabinet prior to adding to the bath. This can effectively reduce the amount of time it takes to warm a 500 ml media bottle from 1+ hours to 20–30 mins. Additionally, by periodically relocating a cold bottle within the beads, the bath is able work more efficiently, which can reduce warm-up times even more.

When an application requires rapid heating of a sample over a brief period, such as heat shock during bacterial transformations, simply raise the temperature of the beads to compensate for the slowe rate of heat transfer. For example, to raise the temperature of a 100 µl sample from 4 °C to approximately 42 °C in less than a minute, traditionally, a 42 °C water bath is used. To accomplish the same results using the beads, the sample is incubated in a 50–55 °C bead bath.

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USING IN WATER BATHS

Water Baths with concealed elements / thermostats

1. Switch bath to OFF position, unplug, and empty water
2. Clean bath thoroughly with soap and water, and thoroughly rinse to remove all soap traces.
3. Rinse tub with 70% ethanol and allow to completely dry. If required, descale following the instructions below.
4. Once completely dry, fill bath to 3/4 volume with beads

Water Baths with exposed elements / thermostats

1. Switch bath to OFF position, unplug, and empty water
2. Remove metal base plate to uncover thermostat or heating element
3. Clean bath thoroughly with soap and water, and thoroughly rinse to remove all soap traces
4. Rinse tank with 70% ethanol and allow to completely dry
5. Clean false base thoroughly with soap and water; rinse with 70% ethanol and allow to completely dry
6. First, fill space beneath false base with beads
7. Then fill the bath to 3/4 volume with beads

Descaling the Stainless Steel Tank

Descale the stainless steel tank regularly to maintain an "as new" condition to ensure corrosion resistance and normal operating conditions are maintained throughout its working life. Descale by adding 1 litre of vinegar to water and gently heating to 50 °C for an hour, empty the tank and brush the lime away.

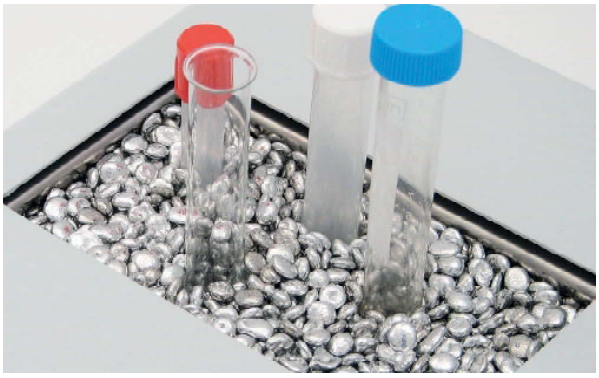
CAUTION: During bath Set-Up, the beads can become very hot near the bath's heating element (generally located at the base of the unit). Always use a stir rod to mix heated Beads.

Standard Set-Up

1. Plug in bath, switch to ON position and set to the desired temperature
2. Allow bath to equilibrate overnight. Bath temperature will rise 10 °C or more above set point during equilibration
3. Alternatively, after 5–10 mins, stir beads briskly with a stir rod and allow bath to equilibrate 2–5 hours
4. Briefly stir Beads before and after each use

USING IN DRY BATH HEATERS

1. Remove the existing block and clean the heating-well.
2. Fill with 3/4 volume with beads
3. Set temperature (eg, 37 °C), and allow temperature to stabilise. Alternatively, use a stirring rod to mix the contents to help reach temperature quicker



Heating Times		
Pack Size	**37°C**	**60°C**
0.5L	20 mins	30 mins
4.0L	30 mins	40 mins
12L	30 mins	40 mins

Ordering Information		
Cat. No.	**Description**	**Pack Size**
N2400-4900	Bath Beads, 0.5L	1
N2400-4901	Bath Beads, 4.0L	1
N2400-4902	Bath Beads, 12L	1

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