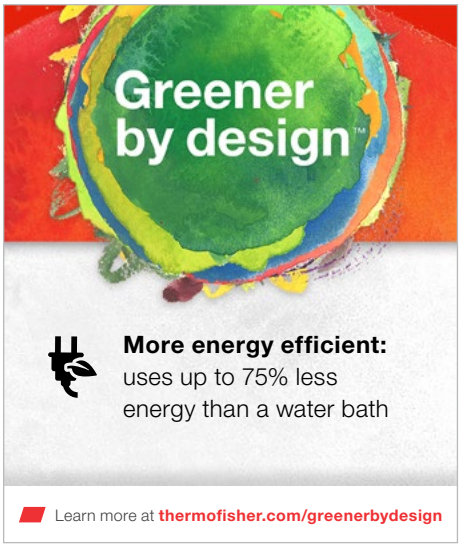
Lab Armor Beads



Introduction

Thermo Fisher Scientific is committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claims that using Gibco™ Lab Armor™ Beads allows one to use less electricity than a traditional water bath. Using Lab Armor Beads also reduces the need for biocidal agents.

Product description

Lab Armor Beads are made of a metallic alloy and comprise nonuniform metal beads designed to replace water in a water bath. The resulting dry bath uses less electricity and fluctuates less in temperature during operation than a water bath. The reusable beads also eliminate the routine use of harmful germicides and can be cleaned with a spray of 70% ethanol. Additionally, Lab Armor Beads eliminate maintenance such as emptying, cleaning, monitoring and refilling the water bath.

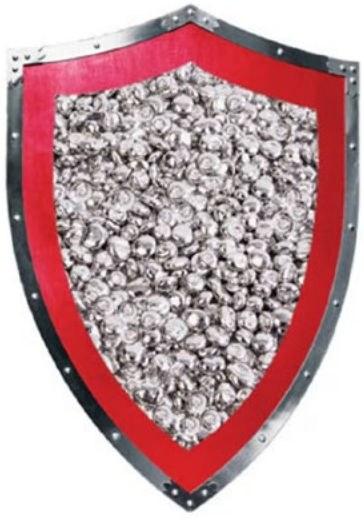


Figure 1. Gibco™ Lab Armor™ Beads

Green feature

More energy efficient

A bath filled with Lab Armor Beads draws approximately 75% (Table 1) and 63% (Table 2) less energy when run at 37°C and 65°C, respectively, compared to a water-filled bath run at the same temperatures.

To compare energy usage, a nonshaking standard bath, with or without a lid, was filled with 12 L of Lab Armor Beads and compared with the same bath filled with 12 L of water and set to either 37°C or 65°C. Temperature was monitored using a calibrated Fluke™ 43B digital multimeter. The study was conducted in a normal laboratory environment with the room temperature set to 20°C. Once the bath was filled with either water or Lab Armor Beads, the temperature was allowed to stabilize overnight before energy consumption was measured. Energy consumption was recorded using a standard power meter after both 24 hours and seven days of operation under typical laboratory conditions. Being able to reduce energy use and eliminate the need for germicides with Lab Armor Beads is a win for our customers, our company and the planet.

Table 1. Energy usage during 24-hour run at 37°C without lid.*

Bath run condition	Average power usage (kW)	Run time (hr)	Energy usage(kWh)
Filled with 12 L Lab Armor Beads	0.01	24	0.24
Filled with 12 L water	0.04	24	0.96
Net reduction			~75%

* The net reduction in energy consumption remained the same during the 24 hours and 7 days of operation under typical laboratory conditions.

Table 2. Energy usage at 65°C with lid.

Bath run condition	Average power usage (kW)	Run time (hr)	Energy usage(kWh)
Filled with 12 L Lab Armor Beads	0.03	24	0.72
Filled with 12 L water	0.08	24	1.92
Net reduction			~63%

Find out more at **thermofisher.com/labarmorbeads**