

Freezing – A Warming Process?



Purpose: To demonstrate that heat exits a body as it freezes

Location: room 152, shelf C5; gloves, 136/M1

Place an unactivated (liquid) heat pack (shown on the right in the first photo) into a 600 ml beaker and add just enough (cold) tap water to cover the pack. Insert thermometer, allow these to reach thermal equilibrium, then measure and record the temperature (center photo). Next, activate the heat pack by squeezing the activator button and place it back into the beaker (submerged). Monitor the temperature rise of the water and record its peak value (right photo). Ask the class to explain why the temperature of the water is rising even though the heat pack is freezing. Ask the class if they've observed any instances of this phenomenon in everyday life.

NOTE: Heat packs can be returned to their (liquid) state by boiling them in water for several minutes.