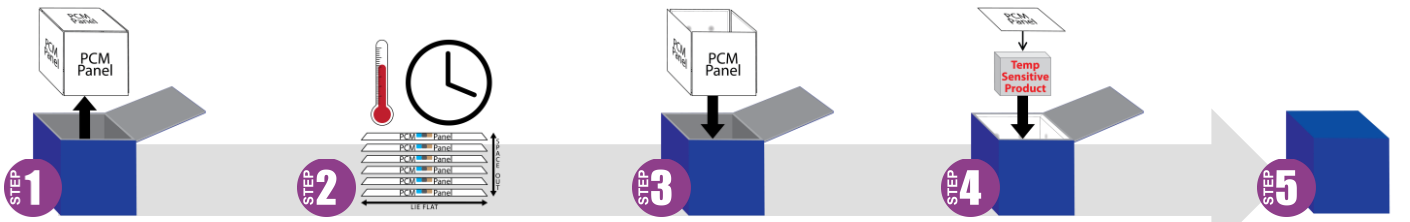
# Cool Cube™
# Best Practices

*Call for Technical Support*
***(608) 526-6901***

- ❑ Prep the PCM (phase change material) panels before use according to one of the described methods provided by VeriCor.
- ❑ Ensure all components are clean and free of damage.
- ❑ Lay panels flat when turning them solid (to disperse liquid throughout the panel).
- ❑ Enable ample air flow around all panel sides.
  - Use spacers (pencils) or racks. →

- ❑ Freezing/melting times vary depending on number of panels being prepped and equipment being used.
- ❑ Assemble using all six panels for maximum hold time.
  - Using less panels does not change the holding temperature, but does decrease the hold time.
- ❑ Panels are reusable (10,000+ cycles).
  - End-of-life disposal: Panels are a plastic #2, typically recycled by businesses/communities. PCM is nontoxic and readily biodegradable.
- ❑ Use a calibrated data logger or other temperature monitoring device to observe internal temperature.
- ❑ Avoid unnecessary opening of the Cool Cube™ after loading payload. Opening of the Cool Cube™ will decrease hold time.
- ❑ An infrared temperature thermometer can assist in ensuring the panels reach a safe pack-out temperature (good for finding out the approximate temperature of each panel).
- ❑ The farther the ambient temperatures are from the melting point, the quicker PCM will change states (solidify/liquefy).




**Remove** PCM Panels

**Prep** PCM Panels

**Various methods based on type of panel, equipment available & purpose.**

**Assemble** PCM Panels

**Pack-Out** Product

**Close** Bag/Case

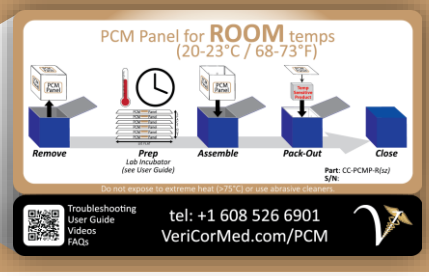
VERICOR LLC

# Cool Cube™ Room Temp PCM Panels

for FFPE, platelets, biospecimens & more.

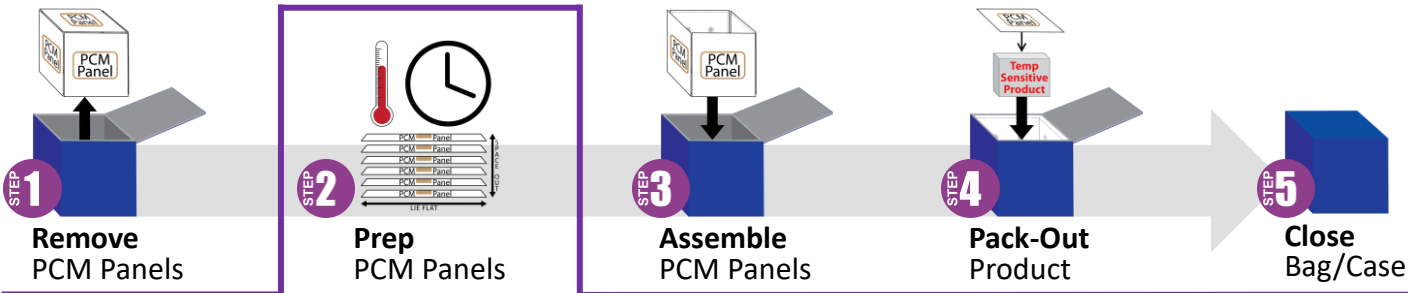
*All Sizes*

*Tan Tab/Label*




**Video**

## Prep Method B: **Fridge/Room** Prep to keep product cool




**Remove** PCM Panels

**Prep** PCM Panels

**Assemble** PCM Panels

**Pack-Out** Product

**Close** Bag/Case

**DO NOT assemble panels directly from a fridge**, as they may be initially below 20°C.

### Panel Prep

**2.1 Lay panels flat in a refrigerator** until all the PCM (phase change material inside the panel) turns solid. At 4°C/39°F the PCM will solidify in a couple hours.

**2.2 Spread panels out (enable airflow to all sides) in a room just before use** to allow the PCM inside to rise to the appropriate operating temperature. Approximate times:

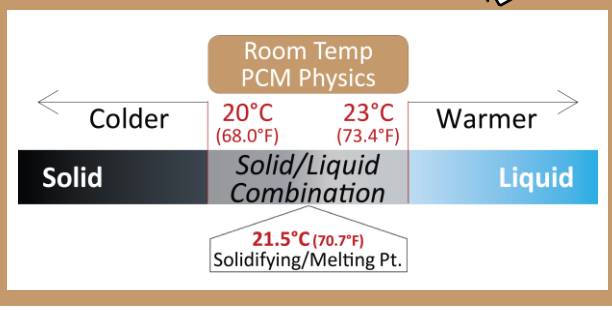
"03" size = 35 minutes
"08" size = 40 minutes

*Times based on a 22°C/72°F room.*

"28" size = 45 minutes
"96" size = 50 minutes

**2.3 Shake panels to verify the PCM is solid with just a little liquid.** If a little liquid is heard, it is at 21.5°C. If there is a lot of liquid, restart at step 2.1 to ensure the longest hold time. Using liquid PCM or panels with a solid/liquid combination decreases the hold time. Wipe off condensate and proceed with assembly.

### PCM Panel Shake Test




### ISTA 7D Thermal Performance Study

Lab-Qualified Hold Times When Starting with Solid PCM

| | Qualified Temps: | 15-25°C | 20-24°C |
|---|---|---|---|
| Cool Cube™ 03 | **Utilizing Six (6)** | 91 hrs | 47 hrs |
| Cool Cube™ 08 | **Lab Freezer Temp** | 83 hrs | 66 hrs |
| Cool Cube™ 28 | **PCM Panels** | 141 hrs | 85 hrs |
| Cool Cube™ 96 | (Tan Tab/Label) | 143 hrs | 91 hrs |

*Times listed are based on lab-validated, 24-hour cycles of summer & winter profiles (hot & cold ambient temperatures) without the additional thermal mass of a payload, which if conditioned properly, will improve hold times. Actual performance times may vary.*