### Lab-Qualified Hold Times

<table>
<thead>
<tr>
<th>Type of PCM</th>
<th>Fridge for 2 to 8°C (36 to 46°F)</th>
<th>Lab Freezer for -50 to -15°C (-58 to 5°F)</th>
<th>Room for 15 to 25°C (59 to 77°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Cube™ 03</td>
<td>65 hrs.</td>
<td>62 hrs.</td>
<td>91 hrs.</td>
</tr>
<tr>
<td></td>
<td>39 hrs.</td>
<td></td>
<td>47 hrs.</td>
</tr>
<tr>
<td></td>
<td>70 hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cool Cube™ 08</td>
<td>76 hrs.</td>
<td>60 hrs.</td>
<td>83 hrs.</td>
</tr>
<tr>
<td></td>
<td>53 hrs.</td>
<td></td>
<td>66 hrs.</td>
</tr>
<tr>
<td></td>
<td>83 hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cool Cube™ 28</td>
<td>103 hrs.</td>
<td>94 hrs.</td>
<td>141 hrs.</td>
</tr>
<tr>
<td></td>
<td>68 hrs.</td>
<td></td>
<td>85 hrs.</td>
</tr>
<tr>
<td></td>
<td>108 hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cool Cube™ 96</td>
<td>126 hrs.</td>
<td>139 hrs.</td>
<td>143 hrs.</td>
</tr>
<tr>
<td></td>
<td>112 hrs.</td>
<td></td>
<td>91 hrs.</td>
</tr>
<tr>
<td></td>
<td>128 hrs.</td>
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<td></td>
</tr>
</tbody>
</table>

### Important Information

- Panels must start in a solid state and at the bottom of the range to attain lab-qualified hold times.
- Assemble with six (6) phase change material (PCM) panels for maximum hold time. Using fewer panels does not change the holding temperature, but decreases hold time and weight.
- The farther the ambient temperature is from the PCM melting point, the quicker the PCM will change states (solidify or liquefy).
- Ensure product/payload/logger is conditioned (already at the desired temperature) before pack-out.
- There are many ways to “prep” PCM panels for use. For up-to-date information, visit: www.VeriCorMed.com/pcm

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**Enjoy this product. Please reach out to us if you have any questions or comments!**

- The VeriCor Team

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**Care:** Avoid puncture. Clean using warm water and soap. Sanitize by using a combination of isopropyl alcohol and water (typically 70/30) or other salt-based disinfectants. DO NOT: autoclave; expose to extreme heat (above 75°C/167°F); use abrasive cleaners; use acetone (or similar solvents).

**Life Expectancy:** The “recommended replacement date” on the insulation does not serve as a hard expiration date or a mandatory replacement date. It is an estimate of when the panel has lost 5% of its overall effectiveness. The insulation is highly effective as long as it has an interior vacuum. The indicator that a section has lost its vacuum is that it is no longer rigid or it appears to have loose skin. Inspect panels (base, lid, and four sides) periodically for signs of vacuum loss. Ultimately the Cool Cube™ can be used as long as the performance is satisfactory, even past the recommended replacement date. Test with a calibrated data logger to ensure satisfactory performance.

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**Sizes**

- 03 (small)
- 08 (medium)
- 28 (large)
- 96 (xlarge)

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**Temps**

- Fridge
- Freezer
- Room

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**Contact Us**

- +1 608 526 6901
- info@VeriCorMed.com

To learn more about Cool Cube™ PCM coolers, visit: VeriCorMed.com/CoolCube

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**Relative Sizes**

** PCM Panels (2) **

** PCM Panels (6) **

** PCM Panels (6) **

** PCM Panels (6) **

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** Summer Profile **

** Important Information **

** Care:** Avoid puncture. Clean using warm water and soap. Sanitize by using a combination of isopropyl alcohol and water (typically 70/30) or other salt-based disinfectants. DO NOT: autoclave; expose to extreme heat (above 75°C/167°F); use abrasive cleaners; use acetone (or similar solvents).

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**User Guide**

- To learn more about Cool Cube™ PCM coolers, visit: VeriCorMed.com/CoolCube or www.VeriCorMed.com/pcm
Instructions for Typical Use

“Typical Use”: maintaining Cool Cube™ contents at a colder temperature than the surrounding environment. For other uses (i.e., keeping products warmer than the surrounding environment) and all prep method variations, go to VeriCorMed.com/pcm.

1. **Remove PCM Panels**
   - Remove panels (white with beveled edges; color-coded label/tab). The case and insulation remain together.

2. **Prep PCM Panels**
   - Follow instructions for specific panel types so that PCM is at the correct temperature before pack-out.

3. **Assemble PCM Panels**
   - Place a panel on the bottom (label down), followed by four panels on the sides (to create a chamber).

4. **Pack-Out Product**
   - Place conditioned product in the chamber, followed by a panel on top (label up).

5. **Close Case**
   - Secure the case (zipper or latches) to complete the system.

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**Refrigerator Temp (blue tab/label)**

- **Remove PCM Panels**
- **Prep PCM Panels**
- **Assemble PCM Panels**
- **Pack-Out Product**
- **Close Case**

**Lab Freezer Temp (grey tab/label)**

- **Remove PCM Panels**
- **Prep PCM Panels**
- **Assemble PCM Panels**
- **Pack-Out Product**
- **Close Case**

**Room Temp (tan tab/label)**

- **Remove PCM Panels**
- **Prep PCM Panels**
- **Assemble PCM Panels**
- **Pack-Out Product**
- **Close Case**

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**TIPS**

- **Fridge Temp**
- **Lab Freezer Temp**
- **Room Temp**

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**PCM Physics**

- **Solid**
- **Solid/Liquid Combination**
- **Liquid**

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**Melting Point**

- 4.5°C (40.1°F)
- -21.5°C (-6.7°F)
- 21.5°C (70.7°F)

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**DO NOT assemble panels directly from a freezer, as they are likely to be initially below 0°C/32°F. Go to VeriCorMed.com/fridgepcm for:**
- Alternative prep methods
- Informational videos
- Support literature

**A freezer kept at -30°C or colder is necessary to turn the PCM completely solid. Go to VeriCorMed.com/labfreezerpcm for:**
- Alternative prep methods
- Informational videos
- Support literature

**A lab incubator is recommended to control the temperature and turn the PCM completely solid. Go to VeriCorMed.com/roompcm for:**
- Alternative prep methods
- Informational videos
- Support literature

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**2.1)** Lay panels flat in a freezer until all PCM turns solid (-15°C/5°F will solidify the PCM in a couple of hours).

**2.2)** Transfer the panels into a fridge at least 3 hours before use. Panels may be stored in the fridge until needed for assembly or until the PCM melts.*

*If a fridge maintains 4°C/39°F or below, the PCM within the panels will not melt (melting point is 4.5°C/40°F), which will keep the panel solid indefinitely until pack-out. If the fridge maintains 5°C/41°F or above, periodically check for melting and restart at step 2.1 to ensure the best performance.

**2.3)** Shake panels to verify PCM is solid. If there is 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.

**2.1)** Lay panels flat in a lab incubator (15-20°C/59-68°F) until the PCM turns solid (15°C solidifies the PCM in 1-2 days).*

*If the incubator temperature is ever warmer than 20°C/68°F, PCM may not get solid (due to the phenomenon of supercooling). Panels stored within the temperature parameters of the product that contain liquid PCM may be used, but hold times will decrease.

**2.2)** Shake panels to verify PCM is solid. If there is liquid, restart at step 2.1 to ensure the longest hold time. Using liquid panels or panels with a solid/liquid combination decreases the hold time.

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**Fridge Temp**

- Colder 3°C (37.4°F) 6°C (42.8°F)
- Warmer

**Lab Freezer Temp**

- Colder -23°C (-9.4°F) -20°C (-4°F)
- Warmer

**Room Temp**

- Colder 20°C (68.0°F) 23°C (73.4°F)
- Warmer

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**CCUG-230417**