



ApolloTM Panel

PRECISE TEMPERATURE CONTROL FOR REFRIGERATION

Using BioPCM[®] Engineered Smart Material

Reduces Product Spoilage

Reduces Carbon Emissions

No Maintenance



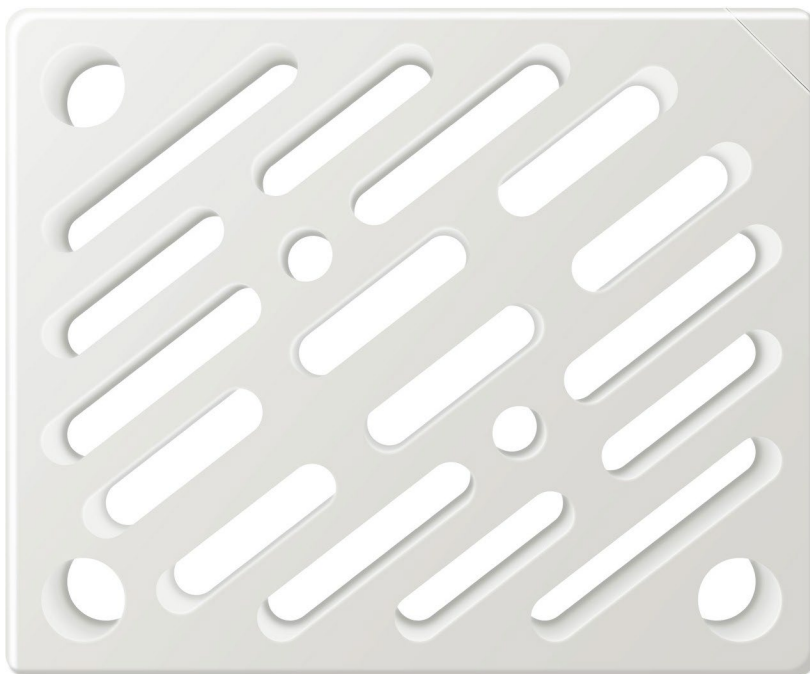
Phase Change Solutions (PCS) is a smart material company whose proprietary family of BioPCM® products impact our daily lives.

The BioPCM® based Apollo™ panel can slow the temperature rise inside the refrigerators when doors are opened and in the event of a power loss. The panel absorbs the excess heat, stores it, and releases it when needed, thereby regulating the temperature inside the refrigerator.

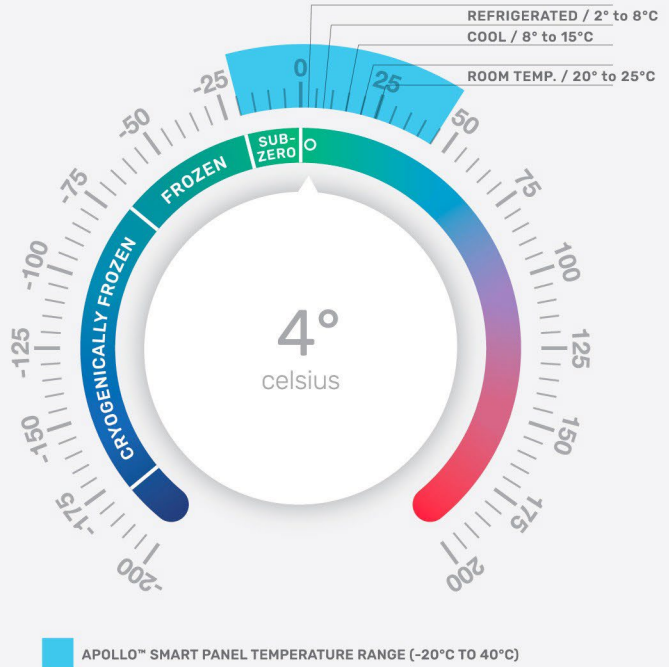
- Reduces Product Spoilage
- Reduces Carbon Emissions
- No Maintenance

This precise tunability enables customers worldwide to preserve vaccines, pharmaceuticals, and drugs at just the right temperature. This eliminates waste, reduces electricity consumption and carbon emissions.

The Apollo™ Panels are simple to attach to refrigerator shelves with zip ties.



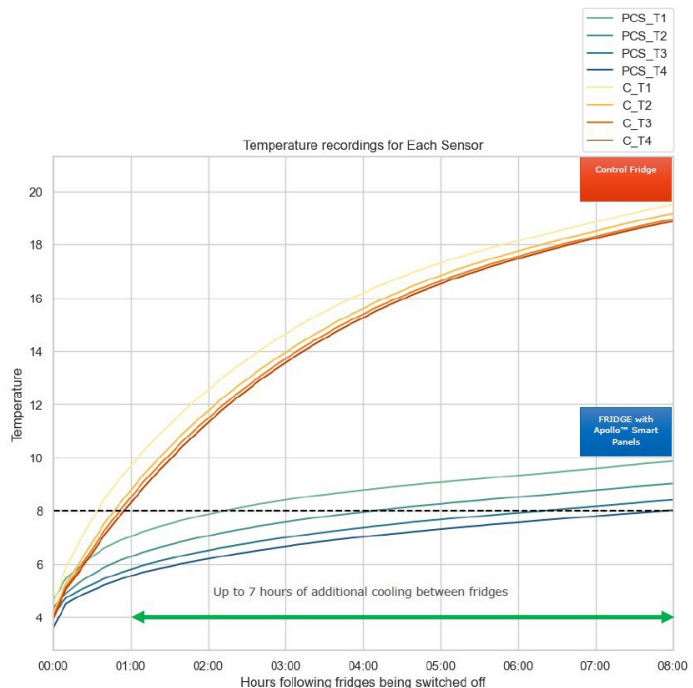
Power outages cause operational issues resulting in expensive spoilage. The Apollo Panel™ has been shown to maintain temperature stability between 6 to 14 hours, depending on the size of the refrigerator and the number of panels that were used.



Vaccines are usually packed by the manufacturers according to strict FDA and other regulations. The Apollo™ Panel powered by BioPCM® reduces risk from the manufacturer to the vaccine recipient and provides standardization of temperature control across the entire supply chain.

SPECIFICATIONS	
PARAMETER	REFERENCE
Panel Construction	HDPE Plastic Container
Dimensions	15.75" L x 15.75" W x 1.25" D
Energy Density	210-250 J/g
Weight	6-7 lbs.

The BioPCM powered Apollo™ Panels maintained a temperature range of 2°C to 8°C for up to 8 hours ±42 minutes through simulated power outages.



Eastern AHSN Apollo™ Panel Trial



Smart Materials For People and The Planet

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