

TECHNICAL DATA SHEET – savE® OM 11

savE® Phase Change Materials (PCM) are organic or inorganic chemical compounds that have large amount of heat energy stored in the form of Latent Heat which is absorbed or released when the materials change state from solid to liquid or liquid to solid. The PCM retains its latent heat without any change in physical or chemical properties over thousands of cycles. Various specific temperature savE® PCM's are commercially available (-33⁰C to +89⁰C) depending upon the applications.

Applications

PCM provides energy efficient solutions for many industries including:

- Insulation for Building and Piping Products
- Biopharmaceutical and Food / Poultry / Milk Products Transportation
- Telecommunications and Heat Sinks
- Hot and Cold Storage
- Boiler and Hot Water Systems Industry looking to exploit Off-Peak Electricity Tariffs / Reducing Chilling Equipment Costs by Storing Energy at Off-Peak Hours

However there is no limit as to who can apply PCM technology to their operation, to improve thermal management, cost and energy efficiencies.

savE® OM 11

savE® - OM 11 is a PCM having melting temp. of ~10.9°C. It stores thermal energy as latent heat in its crystalline form. On changing phase, this latent heat is released or absorbed, allowing the ambient temperature within the system to be maintained.

savE® - OM 11 is constituted of the right mix of various materials, additives and nucleating agents allowing equilibrium between solid and liquid phases to be attained at the melting point. While melting, it continues to absorb heat from the environment without further increase in temperature, thereby maintaining the environment temperature.

Why savE® OM 11?

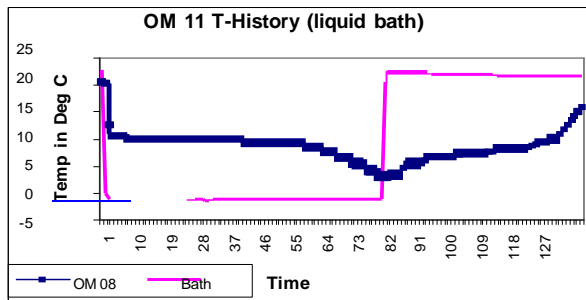
savE® - OM 11 has a freezing temperature of ~10.5°C, a temperature that makes it ideal for many cold energy applications. Some of its salient features include:

- The PCM is chemically and thermally stable by using PLUSS® proprietary additives
- It is non-toxic

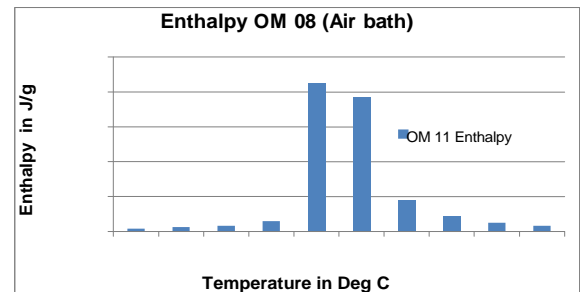
Technical Specification:

Product	: savE®
Series	: OM 11
Description	: Mixture of organic materials
Appearance	: Colourless liquid

T-History Test



T-History graph **saveE®** OM 11



Enthalpy Vs Temp **saveE®** OM 11

A 25g sample is taken in a test tube and placed in a temperature controlled bath. A temperature sensor is placed in the test tube and bath to record the temperatures using a datalogger. The bath (liquid bath) is maintained at around -5°C during the freezing cycle and at around 20°C (air bath) during the melting cycle.

Property	Value*	Test Method	Test Conditions (if any)
Freezing Temp. (°C)	10.9	PLUSS® T - History	@ -5 °C (liquid bath)
Melting Temp. (°C)	10.5	PLUSS® T - History	@ 20 °C (air bath)
Latent Heat (kJ/kg)	260	Calorimetry	-
Liquid Density (kg / m ³)	1060	ASTM D891-95	@ 32°C
Solid Density (kg / m ³)	1190	PLUSS® Internal	@ 2°C
Liquid Specific Heat (J/g.K)	NA	-	--
Solid Specific Heat (J/g.K)	NA	-	--
Thermal Conductivity (W/m.K)	N.A.**	-	For Liquid
Thermal Conductivity (W/m.K)	N.A.**	-	For Solid
Base Material	Organic chemicals	-	
Congruent Melting	Yes	-	
Flammability	May be combustible at high temperature		
Thermal Stability (cycles)	**	PLUSS® Internal	
Max.Operating Temp. (°C)	~80		

*- Nominal Values. Actual values lie in a range. Consult test certificate for details.

** - Calculated from literature value

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