



## PureTemp® Thermal Energy Storage Materials

PureTemp thermal energy storage materials offer new levels of performance in storing or releasing large quantities of thermal energy at any given temperature. Our proprietary formulations and patented manufacturing processes yield superior quality biobased phase change materials at cost effective prices.

Some key properties:

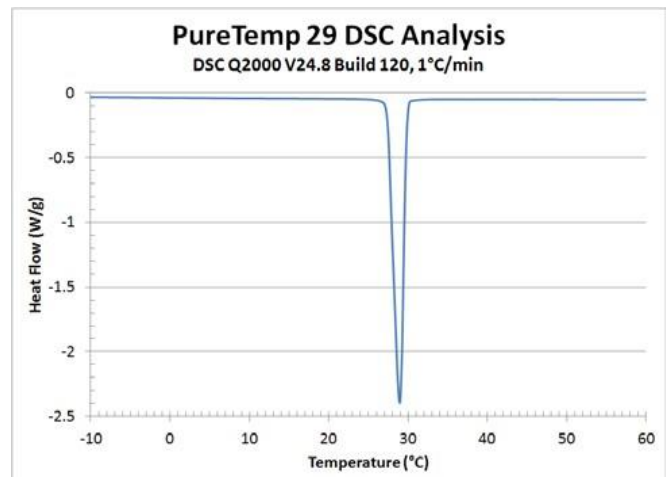
- Thermal energy storage capacities which average 200 J/g
- Over 200 unique, engineered phase change transition temperatures between -40 °C and 151 °C
- Consistent, repeatable performance over thousands of thermal (melt/solidify) cycles
- 100% renewable and readily biodegradable – produced from agricultural sources, not petroleum

### PureTemp 29 Technical Information

PureTemp 29 is a USDA Certified Biobased product

Appearance	Clear liquid, waxy solid
Melting point	29 °C
Heat storage capacity	202 J/g
Thermal conductivity (liquid)	0.15 W/m°C
Thermal conductivity (solid)	0.25 W/m°C
Density (liquid)	0.85 g/ml
Density (solid)	0.94 g/ml
Specific heat (liquid)	1.94 J/g°C
Specific heat (solid)	1.77 J/g°C

Typical physical properties are listed in the table above.



### Thermal Cycle Stability

A thermal cycle stability study was performed on PureTemp 29 in which samples underwent a series of freeze and thaw cycles. The two year study completed 10,000 thermal cycles, with performance analyses performed on the samples at various time points. The study for PureTemp 29 found that:

- The average latent heat for PureTemp 29, over the course of 10,000 cycles, passes
- PureTemp 29 maintained a peak melting point of  $28.6 \pm 0.2$  °C

PureTemp 29 is stable through 10,000 thermal cycles, which is approximately 27.4 years of continuous daily usage.

### Entropy Solutions, LLC.

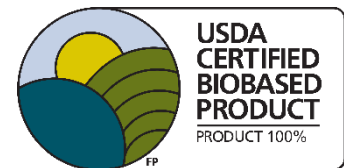
151 Cheshire Lane N. Suite 400, Plymouth, MN 55441

Tel: +1-952-941-0306

Inquiry: [www.puretemp.com/contact](http://www.puretemp.com/contact)

Website: [www.puretemp.com](http://www.puretemp.com)

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