



## 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:

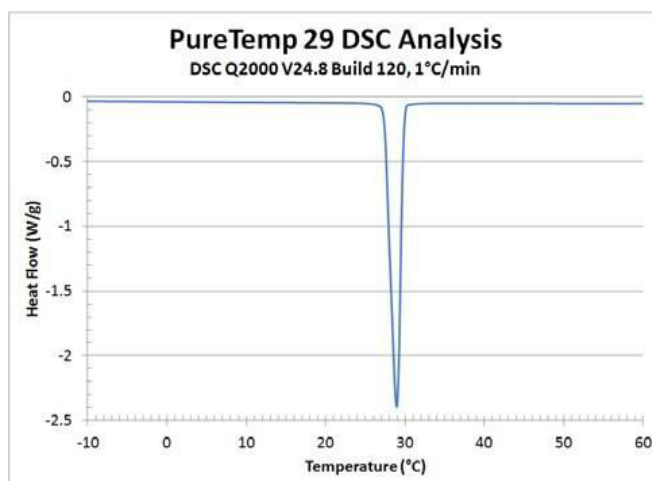
- Thermal energy storage capacities which average 200 J/g
- Over 200 unique, engineered phase change transition temperatures between -40 °C and 151 °C
- Consistent, repeatable performance over thousands of thermal (melt/solidify) cycles
- 100% renewable and readily biodegradable – produced from agricultural 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.

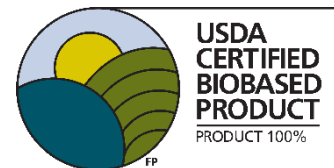
4232 Park Glen Road, Minneapolis, MN 55416

Tel: +1-952-941-0306

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

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

© Entropy Solutions, LLC. All Rights Reserved



**IMPORTANT NOTE:** The preceding data is based on tests and experience which Entropy Solutions believes reliable, and is supplied for informational purposes only. Entropy Solutions expressly disclaims any liability whatsoever for damage or injury which results from the use of the preceding data and nothing contained therein shall constitute a guarantee, warranty, or representation (including freedom from patent liability) by Entropy Solutions with respect to the data, the product described, or its fitness for use for any specific purpose, even if that purpose is known to Entropy Solutions. Individual requirements may vary and each purchaser is urged to perform their own tests, experiments, and investigations in the use of this product. For detailed safety and handling information regarding these products, please refer to the respective PureTemp Safety Data Sheet.