PureTemp®
GLOBAL AUTHORITY ON PHASE CHANGE MATERIAL

Safety Data Sheet – EU ECHA

Section 1 – Chemical Product and Company Identification

Product name: PureTemp 4
Product number: 100400200

Recommended use: Thermal energy storage.

Company information:
Entropy Solutions, LLC.
151 Cheshire Lane N., Suite 400
Plymouth, MN 55441
952-941-0306

Emergency contact:
Call CHEMTREC Day or Night
1-800-424-9300 (USA)
+1 703-527-3887 (International)

Section 2 – Hazards Identification

GHS classification:
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 2), H411

GHS label elements, including precautionary statements

Pictogram:

Signal word: Warning

Hazard statement(s):
H400, Very toxic to aquatic life.
H411, Toxic to aquatic life with long lasting effects.

Precautionary statement(s):
P273, Avoid release to the environment
P391, Collect spillage
P501, Dispose of contents/container to an approved waste disposal plant

Section 3 – Composition/Information on Ingredients

CAS #	Component
Trade Secret	Proprietary

PureTemp 4 Variants:
PureTemp 4X Orange (100400202, unnucleated)
PureTemp 4N Orange (100400212, nucleated)

Section 4 – First Aid Measures

Description of first aid measures

Inhalation:	If breathed in, move person to fresh air. If breathing is affected seek medical attention.
Skin contact:	Wash immediately with soap and water. Cover irritated skin with an emollient. If irritation persists, get medical attention.
Eye contact:	Immediately flush eyes with large amounts of water, continuing to flush for 15 minutes.
Ingestion:	Get immediate medical attention or advice. Do not induce vomiting.

Most important symptoms and effects, both acute and delayed: May cause skin dryness and irritation. May cause eye and gastrointestinal irritation.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5 – Firefighting Measures

Extinguishing media

Suitable:	Alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable:	No data available.

Special hazards: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting, if necessary.

Section 6 – Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Eliminate all ignition sources. Evacuate personnel to safe areas. For personal protection see section 8.

Environmental precautions: Prevent further leakage or spillage, if safe to do so. Do not let product enter drains. Discharge into the environment should be avoided.

Methods and materials for containment and clean up: Absorb or cover with dry earth, sand or other non-combustible material and transfer for disposal. Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

Precautions for safe handling: Avoid contact with skin and eyes. Wash thoroughly after handling.

Conditions for safe Keep the container tightly closed and in a cool, well-ventilated place.

storage:	Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section 8 – Exposure Controls and Personal Protection

Control parameters:	Contains no substances with occupational exposure limit values.
Engineering controls:	Handle in accordance with good industrial hygiene and safety practices. Use appropriate ventilation.

Personal protective equipment

Eyes/face:	Use equipment for eye protection tested and approved under appropriate government standards, such as NIOSH (US) or EN 166 (EU).
Skin:	Use impervious gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product. Dispose of the contaminated gloves in an appropriate manner. Wash and dry hands.
Body:	Wear impervious clothing.
Respiratory:	Respiratory equipment is not required.
General	Eye wash fountain and emergency showers are recommended.

Section 9 – Physical and Chemical Properties

Physical state:	Liquid/solid.
Appearance:	Clear liquid. White solid.
Odor:	Musty
Odor threshold:	No data available.
pH:	No data available.
Melting point:	4 ^{o}C (39.2 ^{o}F)
Boiling point:	262 ^{o}C (504 ^{o}F)
Flash point:	>112 ^{o}C (234 ^{o}F)
Evaporation rate:	No data available.
Flammability (solid/gas):	No data available.
Upper/lower flammability or explosive limits:	No data available.
Vapor pressure:	>0.0105 torr at 25 ^{o}C (77 ^{o}F)
Vapor density:	No data available.

Relative density:	0.87 g/mL at 25 ^{o}C (77 ^{o}F)
Water solubility:	0.00759 g/L at 25 ^{o}C (77 ^{o}F)
Partition coefficient: n-octanol/water	Log Pow: 5.43 at 20 ^{0}C (68 ^{o}F)
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	3.6 mm^2/sec at 20 ^{0}C (68 ^{o}F)
Explosive properties:	No data available.
Oxidizing properties:	No data available.

Section 10 – Stability and Reactivity

Reactivity:	No data available.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	No data available.
Incompatible materials:	Strong oxidizing agents and bases.
Hazardous decomposition products:	Carbon monoxide with incomplete combustion.

Section 11 – Toxicological Information

Acute toxicity

LD50 Oral – Rat:	> 2,000 mg/kg
LC50 Inhalation – Rat:	> 5 mg/L (4 h)
Dermal:	No data available.
Carcinogenicity:	None of this product's components are identified as probable, possible, or confirmed carcinogens by ACGIH, IARC, OSHA, NIOSH, or NTP.
Skin corrosion/irritation:	Skin- rabbit. No skin irritation, slight erythema possible.
Eye irritation:	Eyes- rabbit. No eye irritation.
Respiratory or skin sensitation:	No data available.

Section 12 – Ecological Information

Toxicity

Fish:	LC50 – Oryzias latipes - > 0.52 mg/L – 96 h
Algae:	EC50 – Pseudokirchnerella subcapitata – 0.324 mg/L – 72 h
Daphnia and other aquatic invertebrates:	EC50 – Daphnia magna – 0.255 mg/L – 48 h NOEC – Daphnia magna – 0.0814 mg/L – 21 d

Persistence

Biodegradability:	78%, 28 d – Readily biodegradable

Bioaccumulative potential: Does not bioaccumulate

Mobility in soil: No data available.

Section 13 – Disposal Considerations

Disposal instructions: All wastes must be handled in accordance with local, state, and federal regulations.

Section 14 – Transportation Information

ADR

UN number: 3082 Class: 9 Packing group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Labeling: 9 + Environmentally Hazardous

IMDG

UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Marine pollutant: Marine pollutant

Labeling: 9 + Environmentally Hazardous

IATA

UN number: 3082 Class: 9 Packing group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Labeling: 9 + Environmentally Hazardous

Additional Information

EHS-Mark required (ADR 2.2.9.1.10, IMDG Code 2.10.3, IATA 3.9.2.4) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

Section 15 – Regulatory Information

SARA Title III: None of this product's components are subject to the reporting requirements in SARA Title III, Section 302, Section 311, Section 312,

or Section 313.

State regulations: None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

WHMIS IDL: None of this product's components are listed in the WHMIS IDL.

Section 16 – Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. Entropy Solutions, LLC. shall not be held liable for any damage resulting from handling, or from contact, with the specified product. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.