SECTION 1. Identification of the substance/mixture and of the company

Product identifier

Name Used on Label : Thermal C5
Order-No. ( 5 Liter) : 8891403
Order-No. ( 10 Liter) : 8891402
Order-No. ( 55 Gal Drum): 8891301
Company : JULABO U.S.A., INC
Manufactured for:  884 Marcon Blvd
ALLENTOWN,PA 18109 / U.S.A.

Phone : [+1] 610-231-0250
Fax : [+1] 610-231-0260
E-mail : info@julabo.us
Internet : www.julabo.us

Emergency Information : CHEMTREC 1-800-424-9300
Trade name : Polydimethylsiloxane

Recommended use : Industrial use only
Application : temperature control liquid
: working temperature range -60 °C - +110 °C

SECTION 2. Hazards identification

Physical hazards Not classified
Health hazards Not classified
Environmental hazards Not classified
OSHA defined hazards Not classified

*Hazards not stated here are “Not classified”, “Not applicable”, or “Classification not possible”

Label Elements

Hazard symbol None
Signal word None
Hazard statement Not available

Precautionary statement

Prevention Not available
Response Not available
Storage Not available
Disposal Not available

Hazard(s) not otherwise classified (HNOC) None known
Supplemental information None

GHS Classification Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

HMIS Ratings: Health: 0 Flammability: 1 Physical hazard: 0

SECTION 3. Composition / information on ingredients

Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polydimethylsiloxane</td>
<td>63148-62-9</td>
<td>100</td>
</tr>
</tbody>
</table>

Dangerous components Not applicable

SECTION 4. First aid measures

Description of first aid measures
JULABO USA, Inc. www.julabo.us
General information: No special measures required
Inhalation Supply fresh air; consult doctor in case of complaints.
Skin contact Wash skin with soap and water
Eye contact Rinse immediately with plenty of water for at least 15 minutes
Ingestion Rinse mouth. Get medical attention immediately.
Most important symptoms/effects, acute and delayed Not available
Indication of immediate medical attention and special treatment needed Treat symptomatically.

SECTION 5. Firefighting measures

| Flash point: | >214 °F / >101.1 °C (Closed Cup) |
| Autoignition temperature: | >752 °F / >400 °C |
| Flammability Limits in Air: | Not determined |

Suitable extinguishing media Water spray. Foam. Dry chemical powder. Carbon dioxide (CO₂).
Unsuitable extinguishing media Water with full jet
Specific hazards arising from the chemical By heating and fire, harmful vapors / gases may be formed.
Special protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.
Fire-fighting equipment / Instructions Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear appropriate personal protective equipment. Particular danger of slipping on leaked / spilled product.
Environmental precautions Do not allow product to reach sewage system or any water course.
Methods and material for containment and cleaning up Absorb with liquid-binding material (sand, diatomaceous earth, sawdust, acid binders, universal binders)

SECTION 7. Handling and storage

Precautions for safe handling Keep receptacles tightly sealed. Do not breathe mist or vapor. Provide adequate ventilation.
Information about fire - and explosion protection No special measures required
Conditions for safe storage, including any incompatibilities Store in a cool, dry place out of direct sunlight. Keep in original container.
Storage class: VCI: 10
Specific end use(s): No additional information available.

SECTION 8. Exposure controls / personal protection

| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Provide eyewash station |

Individual protection measures, such as personal protective equipment

Eye/face protection Use proper protection – safety glasses as a minimum
Skin protection
Hand protection Wear protective gloves
Other No special protective equipment required
Respiratory protection If ventilation is insufficient when heating use chemical respirator with organic vapor cartridge.
Thermal hazards
Not available

General hygiene considerations
Wash hands before breaks and immediately after handling product. Handle in accordance with good industrial hygiene and safety practice. This product can generate formaldehyde at approximately 150 °C (300 °F) and above in the presence of air. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential cancer hazard. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Density</td>
<td>0.915 (@ 25 °C)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>5 cSt (@ 25 °C)</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing / melting point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point / boiling range</td>
<td>&gt;205 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;214 °F / &gt;101 °C (Closed Cup)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt;752 °F / &gt;400 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Volatile content</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid , gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper / lower flammability or explosive limits</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability limit – lower (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability limit – upper (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive limit – lower (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive limit – upper (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
</tbody>
</table>

Above information is not intended for use in preparing product specifications.

SECTION 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>Product stable and non-reactive under normal conditions of use, storage and transport.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable at normal conditions</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Thermal decomposition of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon Dioxide. Formaldehyde.</td>
</tr>
</tbody>
</table>

SECTION 11. Toxicological information

<table>
<thead>
<tr>
<th>Exposure Route</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Not available</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Not available</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Not available</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Contact of the product with the human eye may result in a harmless and reversible clouding of sight which is of short duration, caused by formation of an oil film on the cornea.</td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics
Information on toxicological effects

Acute toxicity
LD50, oral, rat >5000 mg/kg
LC50, inhalation, rat >535 mg/kg (1 h, Aerosol)
LD50, dermal, rabbit >10000 mg/kg

Skin corrosion / irritation
Not available

Serious eye damage / eye irritation
Contact of the product with the human eye may result in a harmless and reversible clouding of sight which is of short duration, caused by formation of an oil film on the cornea.

Respiratory or skin sensitization
Respiratory sensitization
Not available
Skin sensitization
Not available

Germ cell mutagenicity
Not available

Carcinogenicity
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
Not available

Specific target organ toxicity – single exposure
Not available
Specific target organ toxicity – repeated exposure
Not available
Aspiration hazard
Not available

Further information
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

SECTION 12. Ecological information

Toxicity
Aquatic toxicity
LC0, 96 h, 200 mg/l, Leuciscus idus
EC0, > 10.000 mg/l Pseudomonas putida

Persistence and degradability
Not available
Bioaccumulative potential
Not available
Mobility in soil
Not available
Other adverse effects
Not available

SECTION 13. Disposal considerations

Disposal instructions
Follow applicable Federal, State and Local regulations

SECTION 14. Transport information

DOT
Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Transport / Additional information
Not dangerous according to the above specifications.

SECTION 15. Regulatory information

US Federal regulations
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 313 (TRI reporting)
None present or not present in regulated quantities.
DOT Road Shipment Information (49 CFR 172.101)
Not subject to DOT.
Ocean Shipment (IMDG)
Not subject to IMDG code.
Air Shipment (IATA)
Not subject to IATA regulations

US state regulations

Massachusetts RTK – Substance List
Not regulated

New Jersey Worker and Community Right-to-Know Law
CAS Number [63148-62-9] >60 wt% Polydimethylsiloxane

Pennsylvania Worker and Community Right-to-Know Law
CAS Number [63148-62-9] >60 wt% Polydimethylsiloxane

Rhode Island RTK
Not regulated

California Proposition 65
This product does not contain any chemicals known to the State of California to cause cancer, birth or any other reproductive defects.

International Inventories

<table>
<thead>
<tr>
<th>Polydimethylsiloxane [63148-62-9]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
</tr>
<tr>
<td>Listed on the Japanese ENCS (Existing * New Chemical Substances) inventory</td>
</tr>
<tr>
<td>Listed on the Canadian Domestic Substances List (DSL)</td>
</tr>
<tr>
<td>Listed on KECI (Korean Existing Chemicals Inventory)</td>
</tr>
<tr>
<td>Listed on USA Toxic Substances Control Act (TSCA)</td>
</tr>
<tr>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
</tr>
<tr>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
</tr>
</tbody>
</table>

SECTION 16. Other information

This document was created on 5 May 2015.

<table>
<thead>
<tr>
<th>NFPA ratings</th>
<th>Health: 0 – Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability: 1 – Must be preheated before ignition can occur</td>
<td></td>
</tr>
<tr>
<td>Instability: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.</td>
<td></td>
</tr>
</tbody>
</table>

DISCLAIMER

Information presented herein has been compiled from information provided to us by our suppliers and other sources considered to be dependable and are accurate and reliable to the best of our knowledge and belief but are not guaranteed to be so. We make no warranty as to the results to be obtained in using any material and since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, JULABO USA, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.