

## Thermal H350

Version: 2.3

Reviewed on -05.01.2021

Print date: 05.01.21

## SECTION 1. Identification of the substance/preparation and of the company

### Product details

Product Name : **Thermal H350**  
 Order-No. (5 Liter) : 8940111  
 Order-No. (55 Gal Drum): 8891308  
 Company: : JULABO USA, 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](mailto:info@julabo.us)  
 Internet : [www.julabo.us](http://www.julabo.us)

### Emergency Information : CHEMTREC 1-800-424-9300

Material name/category: : Methyl bis-(phenylmethyl) benzene; dibenzyltoluene

### Recommended use of the chemical and restrictions on use

Recommended use : High temperature heat transfer fluid;  
 JULABO Forte HT systems working temperature range +50 °C to +350 °C

## SECTION 2. Hazards identification

### Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Chronic aquatic toxicity Category 4 May cause long lasting harmful effects to aquatic life  
 Aspiration hazard Category 1 May be fatal if swallowed and enters airways.

#### Classification (67/548/EEC, 1999/45/EC)

May cause long-term adverse effects in the aquatic environment.

### Label elements

#### Labeling (REGULATION (EC) No 1272/2008)

### Hazard pictograms



### Signal word

Danger

### Hazard statements

H304 May be fatal if swallowed and enters airways.  
 H413 May cause long lasting harmful effects to aquatic life.

### Precautionary statements

P273 Avoid release to the environment.  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.  
 P331 Do NOT induce vomiting.  
 P405 Store locked up.  
 P501 Dispose of contents / containers to an approved waste disposal facility.

### Other hazards

JULABO USA, Inc.

[www.julabo.us](http://www.julabo.us)

Page 1 of 10

During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products (e.g. hydrocarbons).

### SECTION 3. Composition/information on ingredients

#### Substance

Identity	CAS #	%	GHS-US classification
Dibenzyltoluene	26898-17-9	90-95	Asp Tox. 1 H304 Aquatic Chronic 4, H413

Classification (Directive 67/548/EEC)

R53

For full text of the H-Statement and R-phrases mentioned in this Section, see Section 16.

### SECTION 4. First aid measure

#### Description of first aid measure

<b>General advice</b>	Take off contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible.).
<b>If inhaled</b>	Move to fresh air in case of accidental vapor inhalation. Consult a physician after significant exposure.
<b>In case of skin contact</b>	Wash off with soap and water.
<b>In case of eye contact</b>	Immediately flush eye(s) with plenty of water
<b>If swallowed</b>	Do NOT induce vomiting. Call a physician immediately.

#### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Not available
<b>Risks</b>	Not available

#### Indication of any immediate medical attention and special treatment needed

<b>Treatment</b>	Not available
------------------	---------------

### SECTION 5. Firefighting measures

#### Extinguishing media

<b>Suitable extinguishing media</b>	Water spray, Dry powder, Foam, Carbon dioxide (CO <sub>2</sub> )
<b>Unsuitable extinguishing media</b>	High volume water jet

#### Special hazards arising from the substance or mixture

<b>Specific hazards during firefighting</b>	Dangerous gases or fumes may occur in case of fire.
---	---

#### Advice for firefighters

<b>Special protective equipment for firefighters</b>	Wear self contained breathing apparatus for firefighting if necessary
--	---

#### Further information

Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool closed containers exposed to fire with water spray. Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### SECTION 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Handle in accordance with good industrial hygiene and safety practice.
-----------------------------	--

<b>Special precautions</b>	Danger of slipping after spill or leakage. Spilling onto the container's outside will make container slippery.
<b>Environmental precautions</b>	Avoid subsoil penetration Do not flush into surface water or sanitary sewer system.
<b>Methods and materials for containment and cleaning up</b>	
<b>Methods for cleaning up</b>	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Use mechanical handling equipment. The material taken up must be disposed of in accordance with regulations. Wash clothes if they get dirty. If equipment gets dirty, clean using a surfactant solution. Clean contaminated floors and objects thoroughly while observing environmental regulations.
<b>Reference to other sections</b>	For personal protection see Section 8.

## SECTION 7. Handling and storage

<b>Precautions for safe handling</b>	
<b>Advice on safe handling</b>	During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products. During removal of low boiling decomposition products with potential highly flammable properties from the system, appropriate risk management measures for flammable liquids have to be applied – especially when they are concentrated and collected. Risk management measurements for flammable liquids are at least: Take precautionary measures against static discharge. Ground / bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical / ventilation / lighting/ equipment. Keep away from heat / sparks / open flames / hot surfaces. No smoking. Keep container tightly closed. Wear protective gloves / protective clothing / eye protection / face protection.
<b>Advice on protection against fire and explosion</b>	Normal measures for preventive fire protection.
<b>Conditions for safe storage, including any incompatibilities</b>	
<b>Requirements for storage areas and containers</b>	Keep container tightly closed.
<b>Storage classification container material</b>	Steel, stainless steel

## SECTION 8. Exposure controls / personal protection

### Control parameters

#### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

##### NATIONAL OCCUPATIONAL EXPOSURE LIMITS

Not available

##### EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

Not available

### DERIVED NO EFFECT LEVEL (DNEL)

#### Dibenzyltoluene

Workers, dermal, acute / short-term exposure – systemic effects:  
Not relevant / not applicable

Workers, inhalation, acute / short-term exposure – systemic effects:  
Not relevant / not applicable

Workers, dermal, acute / short-term exposure – local effects:  
Not relevant / not applicable

Workers, inhalation, acute / short-term exposure – local effects:  
Not relevant / not applicable

Workers, dermal, long-term exposure – systemic effects: 0.5 mg/kg based on  
body weight and day

Workers, inhalation, long-term exposure – systemic effects: 3.5 mg/m<sup>3</sup>

Workers, dermal, long-term exposure – local effects:  
Not relevant / not applicable

Consumers, dermal, acute / short-term exposure – systemic effects:  
Not relevant / not applicable

Consumers, oral, acute / short-term exposure – systemic effects:  
Not relevant / not applicable

Consumers, dermal, acute / short-term exposure – local effects:  
Not relevant / not applicable

Consumers, inhalation, acute / short-term exposure – systemic effects:  
Not relevant / not applicable

Consumers, dermal, long-term exposure – systemic effects: 0.25 mg/kg  
based on body weight and day

Consumers, inhalation, long-term exposure – systemic effects: 0.87 mg/m<sup>3</sup>

Consumers, oral, long-term exposure – systemic effects: 0.25 mg/kg based  
on body weight and day

Consumers, dermal, long-term exposure – local effects:  
Not relevant / not applicable

Consumers, inhalation, long-term exposure – local effects:  
Not relevant / not applicable

#### PREDICTED NO EFFECT CONCENTRATION (PNEC)

<b>Dibenzyltoluene</b>	Fresh water:	Not relevant / not applicable
	Marine water:	Not relevant / not applicable
	Intermittent release:	Not relevant / not applicable
	Treatment plant:	1 mg / L
	Fresh water sediment:	110 mg / kg based on dry weight
	Marine sediment:	110 mg / kg based on dry weight
	Soil:	1 mg / kg based on dry weight
	Food:	11.1 mg / kg

#### Exposure controls

##### PERSONAL PROTECTIVE EQUIPMENT

**Respiratory protection** No personal respiratory protective equipment normally required. In

## Thermal H350

Version: 2.3

Reviewed on -05.01.2021

Print date: 05.01.21

inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odors exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter.

**Hand protection**

Choice of an appropriate glove does not only depend on the material but also on other quality features and is different from one producer to the next. Observe the instructions regarding permeability and breakthrough time which are provided by the glove supplier. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time. Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the breakthrough time due numerous outside influences (e.g. temperature).

**Gloves suitable for permanent contact:**

Material: fluorinated rubber

Break through time:  $\geq 480$  min

Material thickness: 0.4 mm

**Eye protection**

Tightly fitting safety goggles

**Hygiene measures**

General industrial hygiene practices.

**Protective measures**

Avoid contact with eyes. Wear suitable gloves and eye/face protection.

**ENVIRONMENTAL EXPOSURE CONTROLS****General advice**

Avoid subsoil penetration.

Do not flush into surface water or sanitary sewer system.

**SECTION 9. Physical and chemical properties****Information on basic physical and chemical properties**

Physical state	liquid
Form	liquid
Color	colorless to yellow
Odor	very faint
Odor threshold	not available
pH	not applicable
Melting point/range	$\sim -39 - -32$ °C
Boiling point/boiling range	$\sim 390$ °C; thermal decomposition
Flash point	$\sim 212$ °C; Regulation (EC) No 440/2008; Method A.9.
Evaporation rate	not available
Flammability (Solid, gas)	not applicable (liquid)
Lower explosion limit	not available
Upper explosion limit	not available
Vapor pressure	$< 0.75$ mm Hg, 20 °C
Relative vapor density	not available
Density	1.04 g/mL, 20 °C
Water solubility	$< 0.1$ mg/L, 20 °C
Partition coefficient: n-octanol/water	log Pow: $> 6$ , 22 °C
Ignition temperature	$\sim 500$ °C
Autoignition temperature	not auto-flammable
Viscosity, kinematic	

Temp (°C)	20	60	100	160	200	260	300	340
Viscosity (cSt)	47	8.1	3.1	1.4	0.92	0.57	0.45	0.35

Explosive properties  
Oxidizing properties

not expected based on structure and functional groups  
not expected based on structure and functional groups

**Other data**

None known

## SECTION 10. Stability and reactivity

<b>Reactivity</b>	Stable at normal ambient temperature and pressure.
<b>Chemical stability</b>	No decomposition if stored normally. Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	
<b>Hazardous reactions</b>	None reasonably foreseeable.
<b>Conditions to avoid</b>	Direct heating, dirt, chemical contamination, sunlight, UV or ionizing radiation. Extremes of temperature and direct sunlight.
<b>Incompatible materials to avoid</b>	
<b>Materials to avoid</b>	Strong oxidizing agents
<b>Hazardous decomposition products</b>	
<b>Thermal decomposition</b>	During use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products. See Section 7 in this SDS.

## SECTION 11. Toxicological information

### Information on toxicological effects

<b>Acute toxicity</b>	
<b>Acute oral toxicity</b>	LD50 rat: >2.0 mg/kg; OECD Test Guideline 401 Based on available data, the classification criteria are not met.
<b>Acute inhalation toxicity</b>	LC0 rat: >0.24 mg/L; 4 h; OECD Test Guideline 403 Test atmosphere: vapor Based on available data, the classification criteria are not met.
<b>Acute dermal toxicity</b>	LD50 rat: >2.0 mg/kg; OECD Test Guideline 402 Based on available data, the classification criteria are not met.
<b>Acute dermal toxicity</b>	LD50 rat: >2.0 mg/kg; OECD Test Guideline 402 Based on available data, the classification criteria are not met.
<b>Skin corrosion / irritation</b>	
<b>Skin irritation</b>	Rabbit: slightly irritating; OECD Test Guideline 404 Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	
<b>Eye irritation</b>	Rabbit: not irritating; OECD Test Guideline 405 Based on available data, the classification criteria are not met.
<b>Respiratory or skin sensitization</b>	
<b>Sensitization</b>	Buehler Test guinea pig: not sensitizing; OECD Test Guideline 406. Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	
<b>Genotoxicity in vitro</b>	In vitro tests did not show mutagenic effects
<b>Genotoxicity in vivo</b>	In vivo tests did not show mutagenic effects

<b>Remarks</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	
<b>Carcinogenicity</b>	The study is not necessary. Justification: Not expected to have a side dispersive use and there is no evidence of frequent or long-term human exposure. The substance has been shown to not be genotoxic, therefore it is not expected to have a carcinogenic potential.
<b>Reproductive toxicity</b>	
<b>Reproductive toxicity</b>	Rat; oral NOAEL (parents): 120 mg/kg (based on body weight and day) NOAEL (F1): 750 mg/kg (based on body weight and day); OECD Test Guideline 415
<b>Remarks</b>	Based on available data, the classification criteria are not met.
<b>Teratogenicity</b>	Rat; oral; 20 days NOAEL: 150 mg/kg (based on body weight and day) NOAEL (dam): 150 mg/kg (based on body weight and day); OECD Test Guideline 414
<b>Remarks</b>	Based on available data, the classification criteria are not met.
<b>STOT – single exposure</b>	
<b>Remarks</b>	The substance or mixture is not classified as specific target organ toxicant, single exposure.
<b>STOT – repeated exposure</b>	
<b>Remarks</b>	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
<b>Repeated dose toxicity</b>	Rat; oral; 120 d NOAEL: 50 mg/kg (based on body weight and day); OECD Test Guideline 408 Target organs: Liver
<b>Aspiration hazard</b>	
<b>Aspiration toxicity</b>	May be fatal if swallowed and enters airways.
<b>Further information</b>	
<b>Toxicological information</b>	Toxicokinetics Absorption through gut is possible The substance is metabolized. Bioaccumulation is unlikely.

## SECTION 12. Ecological information

### Toxicity

<b>Toxicity to fish</b>	(96 h) Zebra fish (danio rerio); semi-static test; OECD Test Guideline 203 In the range of water solubility not toxic under test conditions.
<b>Toxicity to fish – Chronic toxicity</b>	The study is not necessary. Justification: Exposure considerations
<b>Toxicity to daphnia and other aquatic invertebrates</b>	(48 h) water flea (daphnia magna); static test; OECD Test Guideline 202: In the range of water solubility not toxic under test conditions.
<b>Toxicity to daphnia and other</b>	(21 d) water flea (daphnia magna); reproduction rate; semi-static test

<b>Aquatic invertebrates. Chronic toxicity</b>	OECD Test Guideline, part 2; In the range of water solubility not toxic under test conditions.
<b>Toxicity to aquatic plants</b>	(72 h) Skeletonema costatum; Growth inhibition; In the range of water solubility not toxic under test conditions.
<b>Toxicity to bacteria</b>	EC10 (4, 92 h) Pseudomonas putida: >1.00 mg/L; oxygen consumption test
<b>Toxicity to soil dwelling organisms</b>	LC50 (14 d) Eisenia fetida (earthworms): 850 mg/kg; artificial soil; OECD Test Guideline 207
<b>Toxicity to terrestrial flora</b>	NOEC (28 d) Folsomia candida, Arthropod (Collembola): 100 mg/kg; artificial soil emergence, growth; EC50 (20 d): >100 mg/kg; Raphanus sativus, Trifolium ornithopodioides, Triticum aestivum; OECD Test Guideline 208
<b>Toxicity for other terrestrial non-mammalian fauna</b>	The study is not necessary. Studies on birds do not need to be conducted due to large mammalian dataset.
<b>Persistence and degradability Biodegradability</b>	Inherently biodegradable; 65%; 62 d; aerobic
<b>Bioaccumulative potential Bioaccumulation</b>	Bioconcentration factor (BCF): 7.525; calculated (literature value)
<b>Mobility in soil Mobility</b>	Based on available data, the classification criteria are not met.
<b>Other adverse effects General advice</b>	May cause long lasting harmful effects to aquatic life.

### SECTION 13. Disposal considerations

**Waste treatment methods**

**Product:** Disposal should be made in accordance with Federal, State and Local regulations. Incineration recommended in approved incinerator according to Federal, State, and Local regulations.

### SECTION 14. Transport information

**UN Number**

<b>ADR</b>	Not dangerous goods
<b>RID</b>	Not dangerous goods
<b>AND</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>ICAO/IATA</b>	Not dangerous goods

**Proper Shipping Name**

<b>ADR</b>	Not dangerous goods
<b>RID</b>	Not dangerous goods
<b>AND</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>ICAO/IATA</b>	Not dangerous goods

**Transport Hazard Class**



## Thermal H350

Version: 2.3

Reviewed on -05.01.2021

Print date: 05.01.21

<b>ADR</b>	Not dangerous goods
<b>RID</b>	Not dangerous goods
<b>AND</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>ICAO/IATA</b>	Not dangerous goods

## Packaging Group

<b>ADR</b>	Not dangerous goods
<b>RID</b>	Not dangerous goods
<b>AND</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>ICAO/IATA</b>	Not dangerous goods

## Environmental Hazards

<b>ADR</b>	Environmentally hazardous	<b>No</b>
<b>RID</b>	Environmentally hazardous	<b>No</b>
<b>AND</b>	Environmentally hazardous	<b>No</b>
<b>IMDG</b>	Marine pollutant	<b>No</b>
<b>ICAO/IATA</b>	Environmentally hazardous	<b>No</b>

## Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks No information available

## SECTION 15. Regulatory information

### Safety, health and environmental regulations / legislation specific for the substance or mixture

#### NATIONAL / OTHER REGULATIONS

**Occupational restrictions** Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

#### Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

List entry in the directive: Directive 96/82/EC does not apply

#### NOTIFICATION STATUS

US Toxic Substances Control Act	TSCA	Yes, positive listing
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 144)	DSL	Yes, positive listing
Australia. Industrial Chemical Act	AICS	Yes, positive listing
New Zealand. Inventory of Chemicals	NZLOC	No, negative listing
Japan. Kashin-Hou Law List	ENCS (JP)	Yes, positive listing
Japan. Industrial Safety & Health Law List	ISHL (JP)	Yes, positive listing
Korea. Existing Chemicals Inventory	KECI (KR)	Yes, positive listing
Phillippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Yes, positive listing
China. Inventory of Existing Chemical Substances	INV (CN)	Yes, positive listing
Switzerland. Consolidated Inventory	CH INV	Yes, positive listing

California: Contains no ingredients listed under the California Safe Drinking Water Act (PROP 65) Listing.

#### Chemical Safety Assessment

##### Dibenzyltoluene

A Chemical Safety Assessment has been carried out for this substance.

## SECTION 16. Other information

### Text of R-phrases in Section 3

R53 May cause long-term adverse effects in the aquatic environment.

### Text of H-Statements referred to in sections 2 and 3.

H304 May be fatal if swallowed and enters airways.

H413 May cause long lasting harmful effects to aquatic life.

NFPA health hazard : 1 – Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 1 – Must be preheated before ignition can occur

NFPA reactivity : 0 – Normally stable, even under fire exposure conditions, and not reactive with water



### DISCLAIMER

The information contained in this document has been gathered from reference materials and/or test data and is to the best knowledge and belief of Julabo USA, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones that exist. Julabo USA, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore.

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.