

## GPS Safety Summary

**Substance Name:**

**DIBENZYL TOLUENE**

### 1. General Statement

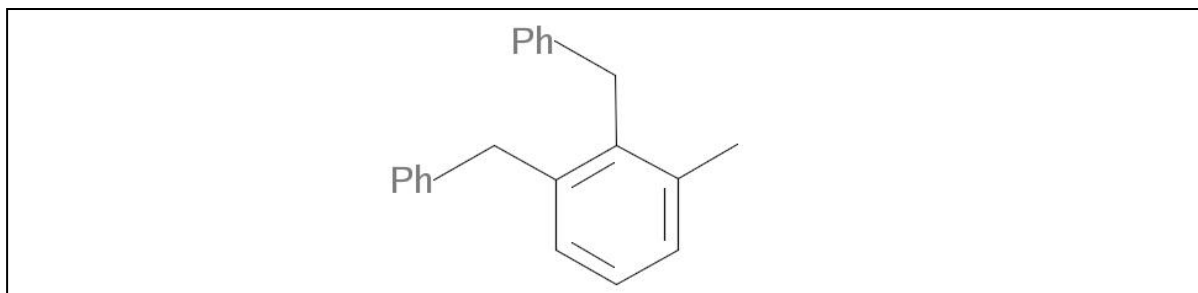
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Dibenzyltoluene is a constituent of dielectric and heat transfer fluids mostly used in closed equipments/systems.

### 2. Chemical Identity

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**Name:** Dibenzyltoluene  
**Brand names:** Jarytherm, Jarylec, Superjary, EXP3  
**Chemical name (IUPAC):** Dibenzyltoluene  
**CAS number(s):** 26898-17-9  
**EC number:** 248-097-0  
**Molecular formula:** C<sub>21</sub>H<sub>20</sub>  
**Structure:**



### 3. Use and applications

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Sold pure or in a mixture with benzyltoluene, dibenzyltoluene is mostly used in closed equipments/systems as a technical fluid.

Its main field of application is as a dielectric fluid (as such it is prepared and impregnated into dielectrics or capacitors) and as a heat transfer fluid (as such it is handled, decanted to and recovered from heat transfer systems).

### 4. Physical / Chemical properties

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Property	Value
Form	Liquid
Physical state (Liquid/solid/gaseous)	Liquid at 20°C at 1013 hPa
Colour	Colourless to yellow
Odour	Slightly aromatic
Density	1.04 g/cm <sup>3</sup> at 20°C

Melting / boiling point	Melting range: -38.5°C to -32.8°C at 1013 hPa Boiling range: > 250°C at 1013 hPa
Flammability	Not flammable
Explosive / Oxidising properties	Not expected based on its structure
Self-ignition temperature	500°C
Vapour pressure	0.00101 Pa at 20°C 0.00162 Pa at 25°C
Mol weight	182.261 g/mol
Water solubility	18 µg/l at 20°C
Flash point	212°C
Octanol-water partition coefficient (LogKow)	6.5 at 20°C
Viscosity (static)	47.94 mm <sup>2</sup> /s at 20°C 16.35 mm <sup>2</sup> /s at 40°C

## 5. Health Effects

Dibenzyltoluene exhibited a low toxicity through acute or repeated exposure. No target organ has been identified.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Based on the available test data, acute toxicity is considered to be low. Inhalation of vapours from heated product can cause difficulty in breathing and formation of carboxyhaemoglobin but the effects are reversible within a few days. May be fatal if swallowed and enters in airways.
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating to skin. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Not irritating to eyes.
Sensitisation	Based on the available test data, not expected to cause allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	Based on the available test data, not expected to cause significant target organ toxicity after repeated exposure.
Genotoxicity / Mutagenicity	Based on the available test data, not expected to cause adverse genetic effects.
Carcinogenicity	Despite the absence of specific tests, no concern for a carcinogenic potential in view of the overall data.
Toxicity for reproduction	Based on the available test data, did not expected to cause adverse effects on reproduction or on the development of offspring.

## 6. Environmental Effects

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Hydrolysis of dibenzyltoluene is a negligible process due to a very low water solubility. However, the substance can be considered as inherently biodegradable.

Dibenzyltoluene has a high affinity for organic carbon and for lipids, conducting to a strong absorption to soil or sediments. The substance is also considered to be potentially bioaccumulable.

Effect Assessment	Result
Aquatic Toxicity	Dibenzyltoluene shows a low solubility in water. No acute toxicity is observed up to the solubility limit. However, it may cause long lasting harmful effects to aquatic life.

Fate and behaviour	Result
Biodegradation	Biodegradation tests were carried out for dibenzyltoluene. Dibenzyltoluene should be considered as inherently biodegradable, not fulfilling specific criteria.
Bioaccumulation potential	Due to the logKow of 6.5 and a calculated BCF of 7525, dibenzyltoluene should be considered as potentially bioaccumulable.
PBT / vPvB conclusion	Not considered to be PBT or vPvB.

## 7. Exposure

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### 7.1 Human health

Dibenzyltoluene is industrially manufactured and used in a closed process, which minimizes the employee exposure potential. The primary routes of industrial/professional exposure of dibenzyltoluene are inhalation and skin contact. Workers may be exposed during cleaning, maintenance, transfer, sampling and analysis.

Procedures, controls, collective and personal risk management measures are in place, which limit to the minimum any occupational exposure during the manufacture and the use of the substance. Workers who might accidentally come into contact with the undiluted substance should follow the safety measures recommended in the extended safety data sheet.

Based on the risk assessment, the risk is controlled when activities are carried out under conditions recommended in the extended safety data sheet (chapter 8 and exposure scenario).

### 7.2 Environment

Dibenzyltoluene is industrially manufactured and used in closed systems, minimizing release to the environment. Procedures, controls and risk management measures are in place, which limit to the minimum any environmental exposure.

Considering the physico-chemical properties of dibenzyltoluene, release in the air is expected to be limited (low volatility) and control systems in place at the production and use sites. Moreover, release in wastewater is expected to be negligible during manufacture and use as the process operates without water.

However, it should be considered that the substance has a high tendency to adsorb to organic material.

Based on the risk assessment, the risk is controlled when activities are carried out under conditions recommended in the extended safety data sheet (chapter 8 and exposure scenario).

## 8. Risk Management recommendations

Human health measures		
<b>Organizational</b>	A basic standard of occupational hygiene is recommended; Ensure operatives are well informed of the hazards and trained to minimise exposures	
<b>Protection</b>	<b>Eye/Face protection:</b>	Safety glasses
	<b>Skin protection:</b>	Combination with delayed penetration
	<b>Hand protection:</b>	Splash contact, intermittent and prolonged PVC gloves (suitable gloves tested to EN374), gloves thickness: 1.2 – 1.4 mm
	<b>Respiratory protection:</b>	In case of high concentration or prolonged activity, wear a suitable mask.
<b>Engineering controls</b>	Provide appropriate exhaust ventilation at machinery. Ensure that eyewash stations and safety showers are close to workstation locations. Provide self-contained breathing apparatus nearby.	
Environment protective measures		
Do not release into the environment. Do not let the product enter drains. Dam up. Provide a catch tank in a bunded area. Provide impermeable floor. Wash water should not be released to the environment but collected and disposed of in accordance with all relevant management regulations. Destroy the product by incineration (in accordance with local and national regulations). Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.		

## 9. Regulatory Information / Classification and Labelling


### 9.1 Regulatory Information

This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)

### 9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the eSDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according CLP (EC) 1272/2008, implementation of the GHS in the European Union.

Classification	
According to REGULATION (EC) no 1272/2008:	
<ul style="list-style-type: none"> <li>– Aspiration hazard ; Category 1 ; May be fatal if swallowed and enters airways</li> <li>– Chronic aquatic toxicity; Category 4; May cause long lasting harmful effects to aquatic life</li> </ul>	
Signal Word	
Danger	
Pictogram	
<ul style="list-style-type: none"> <li>– GHS08: Health hazard</li> </ul>	
Hazard statement	
<ul style="list-style-type: none"> <li>– H304: May be fatal if swallowed and enters airways</li> <li>– H413: May cause long lasting harmful effects to aquatic life.</li> </ul>	

## 10. Contact Information within Company

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For further information on this substance or product safety summary in general, please contact:

- ICCA portal where the GPS Safety Summary is posted:  
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

## 11. Date of Issues / Revision

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- Date of issue: 2013/02/10
- Date of revision:

## 12. Disclaimer

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The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

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