

Trade name: Therminol VP-3**Product no.:** 5008793**Current version :** 1.1.0, issued: 28.10.2021**Replaced version:** 1.0.1, issued: 01.12.2020**Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name****Therminol VP-3**

Substance name cyclohexylbenzene
REACH registration no. 01-2120087198-44

Identification numbers

CAS no. 827-52-1
EC no. 212-572-0

1.2 Relevant identified uses of the substance or mixture and uses advised against**Relevant identified uses of the substance or mixture**

heat transfer fluids

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet**Address**

Krahn Chemie Deutschland GmbH
Grimm 10
20457 Hamburg
Deutschland

Telephone no. +49 40 320 92-0
Fax no. +49 40 320 92-322

Information provided by / telephone

+49 40 320 92-0

Advice on Safety Data Sheet

msds@krahn.eu

1.4 Emergency telephone number

For medical advice (in German and English):

+49 551 192 40 (Giftinformationszentrum Nord)

In case of transport incidents and other emergencies:

+44 (0)1235 239 670 (NCEC, National Chemical Emergency Centre)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

Asp. Tox. 1; H304

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)****Product identifier**

827-52-1 (cyclohexylbenzene)

Hazard pictograms

GHS08



GHS09

Signal word

Danger

Hazard statement(s)

H304

May be fatal if swallowed and enters airways.

H410

Very toxic to aquatic life with long lasting effects.

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EUH066

Repeated exposure may cause skin dryness or cracking.

Precautionary statement(s)

P273

Avoid release to the environment.

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P331

Do NOT induce vomiting.

P391

Collect spillage.

P405

Store locked up.

P501

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards

PBT assessment

The components of this product are not considered to be a PBT.

vPvB assessment

The components of this product are not considered to be a vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances****Chemical characterization**

Substance name cyclohexylbenzene

Identification numbers

CAS no. 827-52-1

EC no. 212-572-0

Components to be mentioned according to Regulation (EU) No. 1907/2006, Annex II, section 3.1

Substance name	Additional information	
CAS / EC / Index / REACH no	Concentration	%
bicyclohexyl	impurity	
92-51-3	< 10.00	wt%
202-161-4		
-		
-		

3.2 Mixtures

Not applicable. The product is not a mixture.

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. If the patient is likely to become unconscious, place and transport in stable sideways position.

After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area. Irregular breathing/no breathing: artificial respiration. In case of breathing difficulties give oxygen.

After skin contact

When in contact with the skin, clean with soap and water.

After eye contact

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes).

After ingestion

Rinse the mouth thoroughly with water. Do not induce vomiting - aspiration hazard. Call a doctor immediately. Never give anything by mouth to an unconscious person. In case of vomiting keep head of person in face-down position to prevent penetration of vomitus into the trachea.

4.2 Most important symptoms and effects, both acute and delayed**Effects**

In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.

4.3 Indication of any immediate medical attention and special treatment needed

Poisonous symptoms can first be observed after several hours, therefore medical observation for at least 48 hours is necessary.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

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Carbon dioxide; Extinguishing powder; Water spray jet; Foam

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixtureIn the event of fire, the following can be released: Carbon monoxide (CO); Carbon dioxide (CO₂)**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing. Cool endangered containers with water spray jet. Run-off water from fire fighting must not be discharged into drains or enter surface water. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Do not inhale vapours. High risk of slipping due to leakage/spillage of product. Keep away from ignition sources.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3 Methods and material for containment and cleaning up

Prevent spread over a wide area. Take up with absorbent material (e.g., sand, kieselguhr, universal binder). Send in suitable containers for recovery or disposal.

6.4 Reference to other sections

No data available.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Advice on safe handling**

Provide good ventilation at the work area (local exhaust ventilation, if necessary). If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn. Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and after work. Avoid contact with eyes and skin. Provide eye wash fountain in work area. Do not inhale vapours. Remove soiled or soaked clothing immediately.

Advice on protection against fire and explosion

Keep away from sources of heat and ignition.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Keep container tightly closed and dry in a cool, well-ventilated place. Protect from heat and direct sunlight.

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Keep only in the original container.

Incompatible products

Do not store together with: oxidizing agents

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****DNEL, DMEL and PNEC values****DNEL values (worker)**

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value
1	cyclohexylbenzene			827-52-1 212-572-0

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	dermal	Long term (chronic)	systemic	0.666	mg/kg bw/day
	inhalative	Long term (chronic)	systemic	2.35	mg/m ³

DNEL value (consumer)

No	Substance name	Route of exposure	Exposure time	Effect	CAS / EC no
					Value
1	cyclohexylbenzene				827-52-1 212-572-0
	oral	Long term (chronic)		systemic	0.333 mg/kg bw/day
	dermal	Long term (chronic)		systemic	0.333 mg/kg bw/day
	inhalative	Long term (chronic)		systemic	0.58 mg/m ³

PNEC values

No	Substance name	ecological compartment	Type	CAS / EC no
				Value
1	cyclohexylbenzene			827-52-1 212-572-0
	water	fresh water		0.37 µg/L
	water	marine water		0.037 µg/L
	water	fresh water sediment		0.191 mg/kg dry weight
	water	marine water sediment		0.0191 mg/kg dry weight
	soil	-		0.038 mg/kg dry weight
	sewage treatment plant	-		17 mg/L
	secondary poisoning	-		13.3 mg/kg food

8.2 Exposure controls**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves. Heat-resistant gloves when using hot material (EN 407).

Other

Chemical-resistant work clothes. Make sure when selecting personal protective equipment (PPE), that it is suitable for the activity, workplace conditions in which it will be used according to the applying European CEN standards and upon consultation with the PPE supplier.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

State of aggregation		
liquid		
Form/Colour		
liquid, clear; Oily		
colourless		
Odour		
mild		
pH value		
No data available		
Boiling point / boiling range		
Value	243	°C
Melting point/freezing point		
Value	3 - 5	°C

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Decomposition temperature			
No data available			
Flash point			
Value	104	°C	
Method	Cleveland open cup		
Ignition temperature			
No data available			
Auto-ignition temperature			
Value	351	°C	
Method	ASTM D 2155		
Flammability			
Not applicable			
Lower explosion limit			
No data available			
Upper explosion limit			
No data available			
Vapour pressure			
Value	0.03	hPa	
Reference temperature	20	°C	
Value	0.16	hPa	
Reference temperature	40	°C	
Relative vapour density			
No data available			
Relative density			
Value	0.934		
Reference temperature	25	°C	
Density			
Value	0.933	g/cm³	
Reference temperature	20	°C	
Value	0.923	g/cm³	
Reference temperature	40	°C	
Solubility in water			
Value	<	0.023	g/l
Reference temperature	20	°C	
Solubility			
No data available			
Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
log Pow		5.6	
Reference temperature		20	°C
Method	OECD 117		
Source	ECHA		
Viscosity			
Value	2.04	mm²/s	
Reference temperature	40	°C	
Type	kinematic		
Value	2.0	mPa*s	
Reference temperature	38	°C	
Type	dynamic		
Particle characteristics			
No data available			

9.2 Other information

Other information	
No data available.	

SECTION 10: Stability and reactivity**10.1 Reactivity**

Dangerous reactions are not expected if the product is handled according to its intended use.

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Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

Dangerous reactions are not to be expected when handling product according to its intended use.

10.4 Conditions to avoid

Heat, naked flames and other ignition sources.

10.5 Incompatible materials

Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
LD50	>	2000	mg/kg bodyweight
Species	rat		
Method	OECD 425		
Source	ECHA		

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
LD50	>	2000	mg/kg bodyweight
Species	rabbit		
Method	OECD 402		
Source	ECHA		

Acute inhalational toxicity			
No data available			

Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	low-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
Species	rabbit		
Method	OECD 405		
Source	ECHA		
Evaluation	non-irritant		

Respiratory or skin sensitisation			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
Route of exposure	Skin		
Species	guinea pig		
Method	OECD 406		
Source	ECHA		
Evaluation	non-sensitizing		

Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
Type of examination	in vitro gene mutation study in mammalian cells		
Method	OECD 476		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Reproduction toxicity			
No	Substance name	CAS no.	EC no.

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1	cyclohexylbenzene	827-52-1	212-572-0
Method	OECD 422		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Carcinogenicity			
No data available			
STOT - single exposure			
No data available			
STOT - repeated exposure			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
Species	rat		
Method	OECD 422		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met (maximum achievable concentration, no mortality).		
Aspiration hazard			
In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.			
Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Contact with hot material may cause thermal burns. Repeated and prolonged skin contact may cause removal of natural fat from the skin and irritation of the skin.			

11.2 Information on other hazards**Endocrine disrupting properties**

No data available.

Other information

No data available.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
LC50		1.2	mg/l
Duration of exposure		96	h
Species	Oryzias latipes		
Method	OECD 203		
Source	ECHA		
Toxicity to fish (chronic)			
No data available			
Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
EC50		0.37	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		
Toxicity to Daphnia (chronic)			
No data available			
Toxicity to algae (acute)			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
EC50		0.96	mg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	ECHA		
Toxicity to algae (chronic)			
No data available			
Bacteria toxicity			

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No data available

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	cyclohexylbenzene	827-52-1	212-572-0
log Pow		5.6	
Reference temperature		20	°C
Method		OECD 117	
Source		ECHA	

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

12.8 Other information

Other information
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Disposal of the product should be carried out in accordance with all applicable regulations following consultation with the responsible local authority and the disposal company in an authorised and suitable disposal facility.
Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information**14.1 Transport ADR/RID/ADN**

Class	9
Classification code	M6
Packing group	III
Hazard identification no.	90
UN number	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	cyclohexylbenzene
Tunnel restriction code	-
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	cyclohexylbenzene
EmS	F-A, S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III

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UN number	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Technical name	cyclohexylbenzene
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

In accordance with the REACH regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

No 3

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category:

E1

Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control)

VOC-value

8

%

National regulations**National chemical inventories**

USA (TSCA)

components listed

ECL (Korea)

components listed

CSNN (Taiwan)

TCSI listed

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H400

Very toxic to aquatic life.

Creation of the safety data sheet

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.

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Prod-ID 744957