

Cyclohexane

33117-2.5L

Version 1.7

Revision Date 10.04.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Cyclohexane
SDS-number : 000000020144
Type of product : Substance
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.
In accordance to the Article 14 (1) of the REACH Regulation
(EC) No 1907/2006, exposure estimation and risk
characterisation is not required.

Chemical name : cyclohexane
Index-No. : 601-017-00-1
REACH Registration Number : no data available

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company	: Honeywell International Inc. 115 Tabor Road 07950-2546 Morris Plains USA	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
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Telephone :
For further information, please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

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Emergency telephone : +1-703-527-3887 (ChemTrec-Transport)
number : +1-303-389-1414 (Medical)
Country based Poison : see chapter 15.1
Control Center

SECTION 2: Hazards identification


2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Aspiration hazard Category 1
H304 May be fatal if swallowed and enters airways.
Skin irritation Category 2
H315 Causes skin irritation.
Specific target organ toxicity - single exposure Category 3 - Central nervous system
H336 May cause drowsiness or dizziness.
Short-term (acute) aquatic hazard Category 1
H400 Very toxic to aquatic life.
Long-term (chronic) aquatic hazard Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms : 

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition

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P260	sources. No smoking. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P352 P304 + P340	IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

2.3. Other hazards

May form explosive mixtures in air. Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
cyclohexane	110-82-7 601-017-00-1 203-806-2	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Corr. 2; H315 STOT SE 3; H336 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	100 %	

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.

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For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately. If unconscious, place in recovery position and seek medical advice.

Inhalation:

Remove to fresh air. Keep patient warm and at rest. Call a physician immediately.

Skin contact:

After contact with skin, wash immediately with plenty of soap and water. Call a physician if irritation develops or persists.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

Ingestion:

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

Extinguishing media which shall not be used for safety reasons:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
No unprotected exposed skin areas.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Do not use a solid water stream as it may scatter and spread fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid contact with skin and eyes. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

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Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary.

Advice on protection against fire and explosion:

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. The heavy vapours can overcome a considerable distance up to the source of ignition. Vapours may form explosive mixtures with air.

Hygiene measures:

General industrial hygiene practice.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

Store in original container. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep away from direct sunlight.

Advice on common storage:

Do not store together with oxidizing and self-igniting products.

7.3. Specific end use(s)

no additional data available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
cyclohexane	EH40 WEL STEL	1.050 mg/m ³ 300 ppm		
cyclohexane	EH40 WEL TWA	350 mg/m ³ 100 ppm		
cyclohexane	EU ELV TWA	700 mg/m ³ 200 ppm		Indicative
cyclohexane	EH40 WEL STEL	1.050 mg/m ³ 300 ppm	15 minutes	

STEL - Short term exposure limit
TWA - Time weighted average

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
cyclohexane	Workers / Long-term systemic effects		700 mg/m ³	Inhalation	
cyclohexane	Workers / Acute systemic effects		1400 mg/m ³	Inhalation	
cyclohexane	Workers / Long-term local effects		700 mg/m ³	Inhalation	
cyclohexane	Workers / Acute local effects		1400 mg/m ³	Inhalation	
cyclohexane	Workers / Long-term		2016mg/kg bw/d	Skin contact	

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	systemic effects				
cyclohexane	Consumers / Long-term systemic effects		206 mg/m3	Inhalation	
cyclohexane	Consumers / Acute systemic effects		412 mg/m3	Inhalation	
cyclohexane	Consumers / Long-term local effects		206 mg/m3	Inhalation	
cyclohexane	Consumers / Acute local effects		412 mg/m3	Inhalation	
cyclohexane	Consumers / Long-term systemic effects		1186mg/kg bw/d	Skin contact	
cyclohexane	Consumers / Long-term systemic effects		59,4mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
cyclohexane	Fresh water: 0,0447 mg/l	Assessment factor: 10
cyclohexane	Marine water: 0,00447 mg/l	Assessment factor: 100
cyclohexane	Sewage treatment plant: 3,24 mg/l	
cyclohexane	Fresh water sediment: 3,6 mg/kg dw	
cyclohexane	Marine sediment: 0,36 mg/kg dw	
cyclohexane	Soil: 0,694 mg/kg dw	

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8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Ensure that eyewash stations and safety showers are close to the workstation location.

Avoid breathing vapours, mist or gas.

Engineering measures

Use with local exhaust ventilation.

Prevent vapour buildup by providing adequate ventilation during and after use.

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Recommended Filter type:

Organic vapour type

Hand protection:

Glove material: Nitrile rubber

Break through time: > 480 min

Glove thickness: 0,4 mm

Camatril® 730

Gloves must be inspected prior to use.

Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

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Skin and body protection:
Protective suit

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: characteristic
Melting point/range	: 6,4 °C
Boiling point/boiling range	: 81 °C at 1.013 hPa
Upper explosion limit	: 8,3 %(V)
Lower explosion limit	: 1,2 %(V)
Flash point	: -18 °C Method: closed cup
Auto-ignition temperature	: 260 °C
Decomposition temperature	: No decomposition if stored and applied as directed.
pH	: Not applicable
Viscosity, kinematic	: No data available
Water solubility	: 0,05 g/l at 20 °C
Partition coefficient: n-octanol/water	: No data available

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Vapour pressure	:	363 hPa at 50 °C
Vapour pressure	:	130 hPa at 25 °C
Density	:	0,78 g/cm ³ at 20 °C
Relative vapour density	:	No data available

9.2 Other Information

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Evaporation rate	:	No data available
Viscosity, dynamic	:	0,94 mPa.s at 20 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. Incompatible materials

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Plastic materials can be attacked.
Formation of explosive gas/air mixtures.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: > 5.000 mg/kg

Method: OECD Test Guideline 401

Acute dermal toxicity:

LD50

Species: Rabbit

Value: > 2.000 mg/kg

Method: OECD Test Guideline 402

Acute inhalation toxicity:

Not classified due to data which are conclusive although insufficient for classification.

Skin irritation:

Classification based on Annex VI of regulation 1272/2008/EC.

Eye irritation:

Not classified due to data which are conclusive although insufficient for classification.

Respiratory or skin sensitisation:

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

Classification: non-sensitizing

Method: in vivo assay

Repeated dose toxicity:

Note: Not classified due to data which are conclusive although insufficient for classification.

Germ cell mutagenicity:

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Note: Not classified due to data which are conclusive although insufficient for classification.

Reproductive toxicity:

Remarks: Not classified due to inconclusive data.

Aspiration hazard:

Classification based on Annex VI of regulation 1272/2008/EC.

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

Solvent removes skin oil from the skin.

Solvent vapours have a narcotic effect if inhaled in high concentrations.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50

flow-through test

Species: Pimephales promelas (fathead minnow)

Value: 4,53 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to aquatic plants:

ErC50

Species: Pseudokirchneriella subcapitata (green algae)

Value: > 4,43 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to Microorganisms:

IC50

Species: activated sludge

Value: 29 mg/l

Exposure time: 15 h

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Toxicity to aquatic invertebrates:

EC50

static test

Species: Daphnia magna (Water flea)

Value: 0,9 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

12.2. Persistence and degradability

Biodegradability:

aerobic

Value: 34 mg/l

Biodegradation: 77 %

Exposure time: 28 d

Result: Readily biodegradable.

Method: OECD Test Guideline 301F

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

The product should not be allowed to enter drains, water courses or the soil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

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Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number

ADR/RID:1145

IMDG:1145

IATA:1145

14.2 UN proper shipping name

ADR/RID:CYCLOHEXANE

IMDG:CYCLOHEXANE

IATA:Cyclohexane

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: yes

Marine pollutant: yes

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC SEVESO III	Quantity: 100.000 kg Quantity: 200.000 kg	

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Listed in Regulation : E1: Hazardous to the aquatic environment		
Directive 2012/18/EC SEVESO III Listed in Regulation : P5c: FLAMMABLE LIQUIDS	Quantity: 5.000.000 kg Quantity: 50.000.000 kg	
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420 112 (begär Giftinformation);+46104566786
Sweden	
Switzerland	145
United Kingdom	(+44) 844 892 0111

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	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240
	Munich : 089/19240
Latvia	+37167042473

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemicals Act (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

Text of H-statements referred to under heading 3

cyclohexane : H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very bioaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.