

## Cyclohexane

33117-2.5L

Version 1.3

Revision Date 05.11.2018

### 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.

Chemical name : cyclohexane

Index-No. : 601-017-00-1

REACH Registration Number : 01-2119463273-41

#### 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 Specialty Chemicals Seelze GmbH<br>Wunstorfer Straße 40<br>30926 Seelze<br>Germany | Honeywell International, Inc.<br>115 Tabor Road<br>Morris Plains, NJ 07950-2546<br>USA |
| Telephone                                | : (49) 5137-999 0  |  |
| Telefax                                  | : (49) 5137-999 123  |  |
| For further information, please contact: | : PMTEU Product Stewardship:<br>SafetyDataSheet@Honeywell.com                                  |  |

#### 1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)  
+1-303-389-1414 (Medical)

Country based Poison Control Center : see chapter 15.1

### SECTION 2: Hazards identification

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### 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 sources. No smoking. |
| P260               | 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        | IF ON SKIN: Wash with plenty of water.   |
| P304 + P340        | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                     |
| P308 + P313        | IF exposed or concerned: Get medical   |

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advice/ attention.

### 2.3. Other hazards

May form explosive mixtures in air.

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

| Chemical name | CAS-No.<br>Index-No.<br>REACH Registration<br>Number<br>EC-No. | Classification 1272/2008   | Concentration | Remarks |
|---------------|--|--|---------------|---------|
| cyclohexane   | 110-82-7<br>601-017-00-1<br>01-2119463273-41<br>203-806-2      | Flam. Liq. 2; H225<br>Asp. Tox. 1; H304<br>Skin Corr. 2; H315<br>STOT SE 3; H336<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410 | 100 %         | 1*      |

1\* - For specific concentration limits see Annexes of 1272/2008

### 3.2. Mixture

Not applicable

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

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### *Eye contact:*

Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. Call a physician immediately.

### *Ingestion:*

When swallowed, allow water to be drunk. 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**

no data available

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

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

##### *Suitable extinguishing media:*

Water spray

Foam

Carbon dioxide (CO<sub>2</sub>)

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.

#### **5.3. Advice for firefighters**

In the event of fire, wear self-contained breathing apparatus.

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.

### **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**

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Do not flush into surface water or sanitary sewer system.

### 6.3. Methods and materials for containment and cleaning up

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.

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## 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:*

The heavy vapours can overcome a considerable distance up to the source of ignition. Use only in explosion-proof areas. Keep away from sources of ignition - No smoking.

*Hygiene measures:*

General industrial hygiene practice.

### 7.2. Conditions for safe storage, including any incompatibilities

*Further information on storage conditions:*

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

### 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 /<br>Value type | Value /<br>Form of exposure | Exceeding<br>Factor | Remarks    |
|-------------|-----------------------|-----------------------------|---------------------|------------|
| cyclohexane | EH40 WEL<br>STEL      | 1.050 mg/m3<br>300 ppm      |                     |            |
| cyclohexane | EH40 WEL<br>TWA       | 350 mg/m3<br>100 ppm        |                     |            |
| cyclohexane | EH40 WEL              |                             |                     | Listed     |
| cyclohexane | EU ELV<br>TWA         | 700 mg/m3<br>200 ppm        |                     | Indicative |

STEL - Short term exposure limit

TWA - Time weighted average

#### DNEL/ PNEC-Values

| Component   | End-<br>use/impact                              | Exposure duration | Value             | Exposure routes | Remarks |
|-------------|---|-------------------|-------------------|-----------------|---------|
| cyclohexane | Workers /<br>Long-term<br>systemic<br>effects   |                   | 700 mg/m3         | Inhalation      |         |
| cyclohexane | Workers /<br>Acute<br>systemic<br>effects       |                   | 700 mg/m3         | Inhalation      |         |
| cyclohexane | Workers /<br>Long-term<br>local effects         |                   | 700 mg/m3         | Inhalation      |         |
| cyclohexane | Workers /<br>Acute local<br>effects             |                   | 700 mg/m3         | Inhalation      |         |
| cyclohexane | Workers /<br>Long-term<br>systemic<br>effects   |                   | 2016mg/kg<br>bw/d | Skin contact    |         |
| cyclohexane | Consumers /<br>Long-term<br>systemic<br>effects |                   | 206 mg/m3         | Inhalation      |         |

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

| Component   | Environmental compartment /<br>Value | Remarks |
|-------------|--------------------------------------|---------|
| cyclohexane | Fresh water: 0,207 mg/l              |         |
| cyclohexane | Marine water: 0,207 mg/l             |         |
| cyclohexane | Sewage treatment plant: 3,24 mg/l    |         |
| cyclohexane | Fresh water sediment: 3,627 mg/kg dw |         |
| cyclohexane | Marine sediment: 3,627 mg/kg dw      |         |
| cyclohexane | Soil: 2,99 mg/kg dw                  |         |

### 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.  
Do not breathe vapours/dust.

#### Personal protective equipment

##### *Respiratory protection:*

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

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### *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

### *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**

|                             |                                |
|-----------------------------|--------------------------------|
| Form                        | : liquid                       |
| Colour                      | : colourless                   |
| Odour                       | : characteristic               |
| Melting point/range         | : 6,4 °C                       |
| Boiling point/boiling range | : 81 °C<br>at 1.013 hPa        |
| Flash point                 | : -18 °C<br>Method: closed cup |
| Ignition temperature        | : 260 °C                       |



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|                       |                                      |
|-----------------------|--------------------------------------|
| Lower explosion limit | : 1,2 %(V)                           |
| Upper explosion limit | : 8,3 %(V)                           |
| Vapour pressure       | : 363 hPa<br>at 50 °C                |
| Vapour pressure       | : 130 hPa<br>at 25 °C                |
| Density               | : 0,78 g/cm <sup>3</sup><br>at 20 °C |
| Viscosity, dynamic    | : 0,94 mPa.s<br>at 20 °C             |
| pH                    | : Not applicable                     |
| Water solubility      | : 0,05 g/l<br>at 20 °C               |

### 9.2 Other Information

no additional data available

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

### 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:*

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

#### *Aspiration hazard:*

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

#### *Other information:*

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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

*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

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### 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. 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.

#### *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

### ADR/RID

|                           |   |             |
|---------------------------|---|-------------|
| UN Number                 | : | 1145        |
| Description of the goods  | : | CYCLOHEXANE |
| Class                     | : | 3           |
| Packaging group           | : | II          |
| Classification Code       | : | F1          |
| Hazard Identification     | : | 33          |
| Number                    | : |             |
| ADR/RID-Labels            | : | 3           |
| Environmentally hazardous | : | yes         |

### IATA

|                          |   |             |
|--------------------------|---|-------------|
| UN Number                | : | 1145        |
| Description of the goods | : | Cyclohexane |

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Class : 3  
Packaging group : II  
Hazard Labels : 3

### IMDG

UN Number : 1145  
Description of the goods : CYCLOHEXANE  
Class : 3  
Packaging group : II  
Hazard Labels : 3  
EmS Number : F-E, S-D  
Marine pollutant : yes

## SECTION 15: Regulatory information

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

| Basis                                     | Value | Remarks   |
|---|-------|---|
| Regulation (EC) No. 1907/2008, Annex XVII |       | This product contains an ingredient according to Annex XVII of the REACH Regulation 1907/2006/EC. |

| Basis  | Value  | Remarks |
|--|--|---------|
| Directive 2012/18/EC<br>Listed in Regulation : E1: Hazardous to the aquatic environment<br>Number in Regulation: 1.3.1 | Amount 1: 100.000 kg<br>Amount 2: 200.000 kg |         |

| Basis  | Value   | Remarks |
|--|---|---------|
| Directive 2012/18/EC<br>Listed in Regulation : P5c: FLAMMABLE LIQUIDS<br>Number in Regulation: 1.2.5.3 | Amount 1: 5.000.000 kg<br>Amount 2: 50.000.000 kg |         |

### Poison Control Center

| Country  | Phone Number   |
|----------|----------------|
| Austria  | +4314064343    |
| Belgium  | 070 245245     |
| Bulgaria | (+359)29154233 |

| Country       | Phone Number                |
|---------------|-----------------------------|
| Liechtenstein | no data available           |
| Lithuania     | +370532362052               |
| Luxembourg    | 070245245; (+352)80002-5500 |

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|                |                              |
|----------------|------------------------------|
| Croatia        | (+3851)23-48-342             |
| Cyprus         | no data available            |
| Czech Republic | +420224919293; +420224915402 |
| Denmark        | 82121212                     |
| Estonia        | 16662; (+372)6269390         |
| Finland        | 9471977                      |
| France         | +33(0)145425959              |
| Greece         | no data available            |
| Hungary        | (+36-80)201-199              |
| Iceland        | 5432222                      |
| Ireland        | +353(1)8092166               |
| Italy          | +39 0649906140               |
| Germany        | Berlin : 030/19240           |
|                | Bonn : 0228/19240            |
|                | Erfurt : 0361/730730         |
|                | Freiburg : 0761/19240        |
|                | Göttingen : 0551/19240       |
|                | Homburg : 06841/19240        |
|                | Mainz : 06131/19240          |
|                | Munich : 089/19240           |
| Latvia         | +37167042473                 |

|                 |   |
|-----------------|---|
| Malta           | no data available                           |
| Netherlands     | 030-2748888                                 |
| Norway          | 22591300                                    |
| Poland          | no data available                           |
| Portugal        | 808250143                                   |
| Romania         | no data available                           |
| Slovakia (NTIC) | +421 2 54 774 166                           |
| Slovenia        | no data available                           |
| Spain           | +34915620420                                |
| Sweden          | 112 (begär<br>Giftinformation);+46104566786 |
| Switzerland     | 145   |
| United Kingdom  | no data available                           |

### Other inventory information

US. Toxic Substances Control Act  
On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act  
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

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Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act  
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances  
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.

## SECTION 16: Other information

### Text of H-statements referred to under heading 3

#### 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.

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