Cyclohexane (cas 110-82-7) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : cyclohexane
Product Number : 443565
Brand : -
Index-No. : 601-017-00-1
CAS-No. : 110-82-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
- Flammable liquids (Category 2)
- Aspiration hazard (Category 1)
- Skin irritation (Category 2)
- Specific target organ toxicity - single exposure (Category 3)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
- Highly flammable. Harmful: may cause lung damage if swallowed. Irritating to skin. Vapours may cause drowsiness and dizziness. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word: Danger

Hazard statement(s)
- 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 statement(s)
- P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P273: Avoid release to the environment.
- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- P331: Do NOT induce vomiting.
- P501: Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements: none


Hazard symbol(s)

R-phrase(s)
- R11: Highly flammable.
- R38: Irritating to skin.
- R65: Harmful: may cause lung damage if swallowed.
- R67: Vapours may cause drowsiness and dizziness.
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)
- S9: Keep container in a well-ventilated place.
2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclohexane</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>110-82-7</td>
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<tr>
<td>EC-No.</td>
<td>203-806-2</td>
</tr>
<tr>
<td>Index-No.</td>
<td>601-017-00-1</td>
</tr>
</tbody>
</table>

C6H12

Molecular Weight : 84,16 g/mol

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

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In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
Central nervous system depression, Drowsiness, Irritability, Dizziness, Gastrointestinal disturbance, Lung irritation, chest pain, pulmonary edema

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.
7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 **Specific end uses**
No data available

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8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**
Components with workplace control parameters

8.2 **Exposure controls**
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

**Eye/face protection**
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1 **Information on basic physical and chemical properties**

a) Appearance Form: liquid

b) Odour Colour: colourless

c) Odour Threshold No data available

d) pH No data available

e) Melting point/freezing point Melting point/range: 4 - 7 °C - lit.

f) Initial boiling point and boiling range 80,7 °C - lit.

g) Flash point -18.0 °C - closed cup

h) Evaporation rate No data available

i) Flammability (solid, gas) No data available

j) Upper/lower flammability or Upper explosion limit: 9 %(V)

Lower explosion limit: 1 %(V)
explosive limits

k) Vapour pressure
   225.0 hPa at 37.7 °C
   102.7 hPa at 20.0 °C

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l) Vapour density
   no data available

m) Relative density
   0.779 g/cm³ at 25 °C

n) Water solubility
   no data available

o) Partition coefficient: n-octanol/water
   log Pow: 3.44

p) Autoignition temperature
   260.0 °C

q) Decomposition temperature
   no data available

r) Viscosity
   no data available

s) Explosive properties
   no data available

t) Oxidizing properties
   no data available

9.2 Other safety information
   no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
   no data available

10.2 Chemical stability
   no data available

10.3 Possibility of hazardous reactions
   no data available

10.4 Conditions to avoid
   Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
   Strong oxidizing agents

10.6 Hazardous decomposition products
   Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

   Acute toxicity
   LD₅₀ Oral - rat: 12.705 mg/kg
   LC₅₀ Inhalation - rat: 4 h: 13.900 mg/m³
   LD₅₀ Dermal - rabbit: > 2.000 mg/kg

   Skin corrosion/irritation
   Skin - rabbit: No skin irritation

   Serious eye damage/eye irritation
   Eyes - rabbit: Mild eye irritation

   Respiratory or skin sensitization
   no data available

   Germ cell mutagenicity
   no data available

   Carcinogenicity
   IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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Reproductive toxicity
   no data available

   Specific target organ toxicity - single exposure
   May cause drowsiness or dizziness.

   Specific target organ toxicity - repeated exposure
   no data available

   Aspiration hazard
   May be fatal if swallowed and enters airways.
Potential health effects

**Inhalation**
Harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

**Ingestion**
May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

**Skin**
May be harmful if absorbed through skin. Causes skin irritation.

**Eyes**
Causes eye irritation.

Signs and Symptoms of Exposure
Central nervous system depression, Drowsiness, Irritability, Dizziness, Gastrointestinal disturbance, Lung irritation, chest pain, pulmonary edema

Additional Information
RTECS: GU6300000

12. ECOLOGICAL INFORMATION
12.1 Toxicity
Toxicity to fish
LC50 - Lepomis macrochirus (Bluegill) - 34.7 mg/l - 96.0 h
LC50 - Pimephales promelas (fathead minnow) - 32 - 93 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 3.78 mg/l - 48 h

12.2 Persistence and degradability
Biodegradability Result: - Not readily biodegradable.

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
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

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
IMDG Marine pollutant: yes
IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available
15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.