

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

1.1. Product identifier

Product form	: Substance
Trade name	: Cyclohexane
Chemical name	: Cyclohexane
IUPAC name	: Cyclohexane
EC index no	: 601-017-00-1
EC no	: 203-806-2
CAS No	: 110-82-7
REACH registration No	: 01-2119463273-41-0029
Formula	: C6H12
Synonyms	: Hexahydroxylbenzene; / hexahydroxylbenzol; / hexanaphtene; / hexamethylene

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Solvent/Thinner.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Only representative

ITS Testing Services (UK)Ltd
Caleb Brett House
734 London Road
RM20 3NL – West Thurrock Grays
Essex, United Kingdom
Tel. +44(0)161 228 0111 – Fax +44(0)161 933 4001
Email: ies14.reach@intertek.com

Manufacturer

Joint-stock company "Kuibyshev Azot"
6, Novozavodskaya, Toliatti, Samara Region
445007 - Russia
T +7 (8482) 561101, 561301 - F +7 (8482) 561301
office@kuazot.ru - <http://www.kuazot.ru/>

1.4. Emergency telephone number

Emergency number : +44 (0) 1612458075 (business hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids Category 2	H225
Skin corrosion/irritation Category 2	H315
Specific target organ toxicity (single exposure) Category 3	H336
Aspiration hazard, Category 1	H304
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

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2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

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 (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P261 - Avoid breathing fume, mist, spray, vapours, gas
P264 - Wash hands and face thoroughly after handling

2.3. Other hazards

Adverse physicochemical, human health and environmental effects :

Highly flammable. Processing vapours can irritate the respiratory tracts, skin and eyes. Irritating to the skin and mucous membranes. Central nervous system depression. May cause skin irritation / dermatitis. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

other hazards which do not result in classification :

Exposure to high concentrations may lead to liver and kidney damage and heart muscle degeneration. May have a narcotic effect at high concentrations. Do not allow the product to be released into the environment. Attacks some forms of plastics, rubber, and coatings.

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : Cyclohexane
CAS No : 110-82-7
EC no : 203-806-2
EC index no : 601-017-00-1

Name	Product identifier	%
Cyclohexane	(CAS No) 110-82-7 (EC no) 203-806-2 (EC index no) 601-017-00-1 (REACH-no): 01-2119463273-41-0029	99,8

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Do not induce vomiting. Immediately get medical attention.
First-aid measures after inhalation : Remove casualty to fresh air and keep warm and at rest. If breathing is difficult, give oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. Seek medical attention immediately.
First-aid measures after skin contact : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. Obtain medical attention if irritation persists.
First-aid measures after eye contact : Rinse immediately and plentifully with water, also under the eyelids, for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.
First-aid measures after ingestion : If the person is fully conscious, make him/her drink water. Never give an unconscious person anything to drink. Do not induce vomiting. Seek medical attention immediately.

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

Symptoms/injuries after inhalation : Irritation of respiratory tract. Excessive concentrations may cause nervous system depression, headache, and weakness leading to unconsciousness. May have a narcotic effect at high concentrations.
Symptoms/injuries after skin contact : Causes skin irritation. Drying up of the skin. Dermatitis.
Symptoms/injuries after eye contact : May cause slight irritation.

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Symptoms/injuries after ingestion : Nausea. Aspiration hazard. Vomiting. Sore throat. Feeling of intoxication. Diarrhea.

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

Treat symptomatically. Exposure to high concentrations may lead to liver and kidney damage and heart muscle degeneration.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂), dry chemical powder, foam.
Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread. Cool containers / tanks with spray water if possible.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable. Keep away from sources of ignition - No smoking. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.
Explosion hazard : oxidizing agents. No flames, no sparks. Eliminate all sources of ignition. May form flammable/explosive vapour-air mixture. Heavier than air, vapours may travel long distances along ground, ignite and flash back to source.

5.3. Advice for firefighters

Firefighting instructions : Cool containers / tanks with spray water if possible.
Protective equipment for firefighters : Exposure controls / Personal protection equipment. In case of fire: Wear self-contained breathing apparatus.
Other information : Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Complete protective clothing. In case of fire: Wear self-contained breathing apparatus.
Emergency procedures : Evacuate unnecessary personnel. When leaks or spills occur, only properly protected personnel should remain in the area.

6.1.2. For emergency responders

Protective equipment : Complete protective clothing. In case of fire: Wear self-contained breathing apparatus.
Emergency procedures : No flames, no sparks. Eliminate all sources of ignition. Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid discharge to the environment. Do not allow uncontrolled discharge of product into the environment. Do not allow run-off from fire fighting to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

For containment : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Use only antistatically equipped (spark-free) tools. Use appropriate container to avoid environmental contamination. Keep container tightly closed and in a well-ventilated place. Comply with applicable regulations for solid waste disposal.
Other information : Do not allow uncontrolled discharge of product into the environment. Do not allow run-off from firefighting to enter drains or water courses.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Containers must be properly grounded before beginning transfer. Use only non-sparking tools. Handle in accordance with good industrial hygiene and safety procedures. No smoking.
Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing prior to re-use. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Avoid static electricity discharges. Ground equipment electrically. Store in dry, cool, well-ventilated area. Use explosion-proof ventilating equipment. Use grounded electrical/mechanical equipment. Keep away from open flames, hot surfaces and sources of ignition. Do not store near oxidizing agents or acidic material.
Storage conditions : Store in tightly closed, properly ventilated containers away from heat, sparks, open flame. Store in tightly closed, leak-proof containers.

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Incompatible materials	: Strong oxidizing agents. Strong acid. Bases.
Heat and ignition sources	: Keep away from open flames, hot surfaces and sources of ignition.
Special rules on packaging	: Bulk transportation shall use a truck with stainless steel or carbon steel tank.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cyclohexane (110-82-7)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	700 mg/m ³
Acute - local effects, inhalation	700 mg/m ³
Long-term - systemic effects, dermal	2016 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	200 mg/m ³ /day
Long-term - local effects, inhalation	700 mg/m ³ /day
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	412 mg/m ³
Acute - local effects, inhalation	412 mg/m ³
Long-term - systemic effects, oral	59,4 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	206 mg/m ³ /day
Long-term - systemic effects, dermal	1186 mg/kg bodyweight/day
Long-term - local effects, inhalation	206 mg/m ³ /day
PNEC (Water)	
PNEC aqua (freshwater)	0,207 mg/l
PNEC aqua (marine water)	0,207 mg/l
PNEC aqua (intermittent, freshwater)	0,207 mg/l
PNEC aqua (intermittent, marine water)	0,207 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3,627 mg/kg dwt
PNEC sediment (marine water)	3,627 mg/kg dwt
PNEC (Soil)	
PNEC soil	2,99 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	Not applicable
PNEC (STP)	
PNEC sewage treatment plant	3,24 mg/l

8.2. Exposure controls

Appropriate engineering controls	: Use only in well-ventilated areas. Use explosion-proof electrical equipment. Use explosion-proof lighting equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Contact lenses should not be worn.
Personal protective equipment	: Protective clothing. Protective goggles. An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits. Gas mask. Gloves.
Materials for protective clothing	: anti-static clothing in natural material or heat resistant synthetic material
Hand protection	: Wear suitable gloves resistant to chemical penetration. Use neoprene or rubber gloves. Protective gloves of PVC
Eye protection	: Chemical goggles or safety glasses. Wear face protection.
Skin and body protection	: Chemical resistant suit. Boots. PVC (Polyvinyl chloride).
Respiratory protection	: An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits



Thermal hazard protection : Protective non-flammable clothing.

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Environmental exposure controls : Do not allow into drains or water courses. Do not allow run-off from firefighting to enter drains or water courses. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : Clear
Odour : Acute
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : 6.5 – 8.1 °C
Freezing point : No data available
Boiling point : 80.7 – 81.4 °C
Flash point : -17 °C
Auto-ignition temperature : 260 °C
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Critical pressure : 860 kPa Maximum explosion pressure
Relative vapour density at 20 °C : No available data
Relative density : 0.778 g/cm³ (20°C)
Solubility : Completely miscible with: Esters, Fats, acetone, Benzene, Ether, alcohols.
Water: 120 mg/l (20°C)
Log Pow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : 1.3 – 7.8 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently in contact with oxidation agents. Reacts violently with (some) halogens.

10.2. Chemical stability

Stable at room temperature. The product is stable at normal handling and storage conditions. Keep container tightly closed and dry.

10.3. Possibility of hazardous reactions

No polymerization. Hazardous polymerization may occur if exposure to fire conditions.

10.4. Conditions to avoid

Avoid ignition sources.

10.5. Incompatible materials

Strong oxidizing agents. Strong acid. Bases.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Cyclohexane (110-82-7)	
LD50 oral rat	12705 - 17350 mg/kg
LD50 dermal rabbit	> 180000 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Not classified

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Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: Central nervous system depression. Repeated exposure may cause skin dryness or cracking. May cause skin irritation / dermatitis. In high concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. High concentrations may cause injuries to gastrointestinal tract, liver, kidneys and central nervous system.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Cyclohexane (110-82-7)

Bioaccumulative potential	Product is biodegradable. Low bioaccumulation potential.
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12.4. Mobility in soil

Cyclohexane (110-82-7)

Ecology - soil	May penetrate and reach the ground water. Quick evaporation when in soil.
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12.5. Results of PBT and vPvB assessment

Cyclohexane (110-82-7)

Results of PBT assessment	Not considered as PBT/vPvB
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12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container to industrial incineration plant.
Waste disposal recommendations	: Dispose of at authorized waste collection point. Dispose of this material and its container at hazardous or special waste collection point. Can be deposited in landfills, sent to an incineration or other appropriate means of disposal provided they meet the requirements of local laws. Collect in closed containers for disposal.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (All modes) : 1145

14.2. UN proper shipping name

Proper Shipping Name (All modes) : Cyclohexane

14.3. Transport hazard class(es)

All modes

Transport hazard class(es)	: 3
Hazard Labels	: 3

14.4. Packing group

Packing group : II

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No

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Other information : No supplementary information available

14.6. Special precautions for user

14.6.1 Overland transport

Classification code (ADR) : F1
Special provisions (ADR) : None
Limited quantities (ADR) : 1 L
Excepted quantities (ADR) : E2
Transport category (ADR) : 2
Hazard identification number (Kemler No.) : 33



Orange plates :
Tunnel restriction code (ADR) : D/E
EAC code : 3YE

14.6.2 Transport by sea

Special provisions (IMDG) : None
Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : E

14.6.3 Air transport

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA packing instructions (IATA) : 353
CAO packing instructions (IATA) : 364
Special provisions (IATA) : None

-14.6.4 Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : None
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Dangers (ADN) : 3+N1

14.6.5 Rail transport

Classification code (RID) : F1
Special Provision (RID) : None
Limited quantities (RID) : 1 L
Excepted quantities (RID) : E2

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not information available

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
Cyclohexane is not on the REACH Candidate List
Cyclohexane is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 2, hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 63)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

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Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed
Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Other information : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It is the user's responsibility to take the mentioned precautionary measures and to ensure that this information is complete and sufficient for the use of this product.

Full text of H- and EUH-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Liq. 2	Flammable liquids Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
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

SDS EU (REACH Annex II)

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