

Safety Data Sheet

according to Regulation (EC) No 1907/2006

14033-32 Cyclohexanone

Print date: 30.06.2014

Product code: 1403332

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

1.1. Product identifier

14033-32 Cyclohexanone

CAS No: 108-94-1
Index No: 606-010-00-7
EC No: 203-631-1

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

Use of the substance/mixture

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name: HACH LANGE GmbH
Street: Willstätterstr. 11
Place: D-40549 Düsseldorf
Telephone: +49 (0)211 5288-383
e-mail: SDS@hach-lange.de
Internet: www.hach-lange.com
Responsible Department: HACH LANGE Ltd.
Pacific Way
Salford Manchester M50 1DL - United Kingdom
Tel. +44 (0) 161 872 1487
e-Mail: info@hach-lange.co.uk

HACH LANGE Ltd.
Unit 1, Chestnut Road Western Industrial Estate
IRL-Dublin 12
Tel. +353 (0)1 4602522
e-Mail: info@hach-lange.ie

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: Xn - Harmful
R phrases:
Flammable.
Harmful by inhalation.

GHS classification

Hazard categories:
Flammable liquid: Flam. Liq. 3
Acute toxicity: Acute Tox. 4
Hazard Statements:
Flammable liquid and vapour.
Harmful if inhaled.

2.2. Label elements

Signal word: Warning
Pictograms: GHS02-GHS07

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Hazard statements

- H226 Flammable liquid and vapour.
- H332 Harmful if inhaled.

Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P240 Ground/bond container and receiving equipment.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P370+P378 In case of fire: Use extinguishing powder to extinguish.

2.3. Other hazards

no data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
203-631-1	cyclohexanone	
108-94-1	Xn - Harmful R10-20	
606-010-00-7	Flam. Liq. 3, Acute Tox. 4; H226 H332	

Full text of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.

After inhalation

Move to fresh air.
If not breathing, give artificial respiration. Consult a physician.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes.
Take off all contaminated clothing immediately.
If skin irritation persists, call a physician.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Show this safety data sheet to the doctor in attendance.

After ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an

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unconscious person. Do NOT induce vomiting.

Call a physician immediately. Show this safety data sheet to the doctor in attendance.

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

irritant effects, headache, Nausea, Vomiting, Diarrhoea, Dizziness, narcosis Salivation.

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Carbon dioxide (CO₂), Alcohol-resistant foam, Dry powder

Unsuitable extinguishing media

No Limit

5.2. Special hazards arising from the substance or mixture

Combustible material

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixture with air.

Pay attention to flashback.

Fire may liberate hazardous vapours.

In the event of fire the following can be released: Carbon dioxide (CO₂), Carbon monoxide

5.3. Advice for firefighters

In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Cool closed containers exposed to fire with water spray.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.

Do not breathe vapours, 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.

For personal protection see section 8.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

Risk of explosion.

6.3. Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).

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6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Use only in well-ventilated areas. Do not breathe vapours or spray mist.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.
Take measures to prevent the build up of electrostatic charge.

Further information on handling

Observe label precautions.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep away from open flames, hot surfaces and sources of ignition. Store in a cool and shaded area.
Keep at temperatures between 10 and 25 °C.

Advice on storage compatibility

Incompatible with oxidizing agents.
Do not store together with Solvent, Acids and bases

Further information on storage conditions

Keep locked up or in an area accessible only to qualified or authorised persons.

7.3. Specific end use(s)

Laboratory chemicals
Reagent for analysis

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
108-94-1	Cyclohexanone	10	41		TWA (8 h)	WEL
		20	82		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
108-94-1	Cyclohexanone	cyclohexanol	2 mmol/mol	urine	Post shift

8.2. Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

Wash hands before breaks and after work.
General industrial hygiene practice.

Eye/face protection

Safety glasses with side-shields

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Hand protection

Use barrier skin cream.

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

In case of full contact:

Glove material : butyl-rubber

Layer thickness: > 0,7 mm

Break through time: 480 min

In case of contact through splashing:

Glove material : Viton (R)

Layer thickness: > 0,7 mm

Break through time: > 120 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

Skin protection

Avoid contact with skin, eyes and clothing.

Respiratory protection

Ensure adequate ventilation, especially in confined areas.

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

Recommended Filter type: A

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

Prevent further leakage or spillage if safe to do so.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: colourless
Odour: mint-like

pH-Value (at 20 °C): ~ 7

Changes in the physical state

Melting point: -31 °C
Initial boiling point and boiling range: 155,6 °C
Sublimation point: not applicable
Softening point: no data available
Pour point: no data available
:
Flash point: 44 °C

Flammability

Solid: no data available
Gas: no data available

Explosive properties

no data available

Test method

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Lower explosion limits: 1,3 vol. %
Upper explosion limits: 9,4 vol. %
Ignition temperature: 430 °C

Auto-ignition temperature

Solid: no data available
Gas: no data available
Decomposition temperature: no data available

Oxidizing properties

no data available

Vapour pressure: 24 hPa
(at 50 °C)

Vapour pressure: 4,5 hPa
(at 20 °C)

Density (at 20 °C): 0,948 g/cm³
Bulk density: no data available

Water solubility: 90 g/L
(at 20 °C)

Solubility in other solvents

no data available

Partition coefficient: no data available

Viscosity / dynamic: 2,2 mPa·s

Viscosity / kinematic: no data available

Flow time: no data available

Vapour density: no data available

Evaporation rate: no data available

Solvent separation test: no data available

Solvent content: no data available

9.2. Other information

Solid content: no data available

no data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapour/air-mixtures are explosive at intense warming.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Reacts with the following substances:
Oxidizing agents, Acids and bases,

10.4. Conditions to avoid

Heat, flames and sparks.
Exposure to light.

10.5. Incompatible materials

None known.

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10.6. Hazardous decomposition products

Carbon monoxide, Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

LD50/oral/rat = 1535 mg/kg; LD50/oral/mouse = 1400 mg/kg

LC50/inhalation/4 h/rat = 8000 ppm

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
108-94-1	cyclohexanone					
		inhalative vapour	ATE	11 mg/l		
		inhalative aerosol	ATE	1,5 mg/l		

Irritation and corrosivity

The product causes irritation of eyes, skin and mucous membranes.

Sensitising effects

May cause sensitisation by skin contact.

Specific effects in experiment on an animal

LD50/rabbit skin = 948 mg/kg

Further information

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity = LD50 = 536 mg/l/48 h

12.2. Persistence and degradability

Inherent biodegradability = 87 % after 14 days (IUCLID)

Readily biodegradable.

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0,81

Bioaccumulation is unlikely.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-94-1	cyclohexanone	0,81

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Advice on disposal

In accordance with local and national regulations.

Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
Classified as hazardous waste.

Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
Classified as hazardous waste.

Waste disposal number of contaminated packaging

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
Classified as hazardous waste.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1915
14.2. UN proper shipping name: CYCLOHEXANONE
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3



Classification code: F1
Limited quantity: 5 L
Transport category: 3
Hazard No: 30
Tunnel restriction code: D/E

Other applicable information (land transport)

Excepted Quantities: E1

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not tested

Marine transport (IMDG)

14.1. UN number: UN 1915
14.2. UN proper shipping name: CYCLOHEXANONE
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3

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Special Provisions: -
Limited quantity: 5 L
EmS: F-E, S-D

Other applicable information (marine transport)

Excepted Quantities: E1

Air transport (ICAO)

14.1. UN number: UN 1915
14.2. UN proper shipping name: CYCLOHEXANONE
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3



Limited quantity Passenger: 10 L
IATA-packing instructions - Passenger: 355
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 366
IATA-max. quantity - Cargo: 220 L

Other applicable information (air transport)

Excepted Quantities: E1
Passenger-LQ: Y344

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not relevant

Other applicable information

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit, Hazard Class: 9, UN Number 3316, Package group II, EMS Code: F-A, S-P. These transport data apply to the entire pack.

SECTION 15: Regulatory information

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

EU regulatory information

Additional information

Classification according to EU Directives 67/548/EEC or 1999/45/EC
The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

National regulatory information

Employment restrictions: Observe employment restrictions for young people.
Water contaminating class (D): 1 - slightly water contaminating

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15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

Revision: 30.06.2014

Safety datasheet sections which have been updated: 4-16

Relevant R-phrases (Number and full text)

- | | |
|----|------------------------|
| 10 | Flammable. |
| 20 | Harmful by inhalation. |

Relevant H- and EUH-phrases (Number and full text)

- | | |
|------|------------------------------|
| H226 | Flammable liquid and vapour. |
| H332 | Harmful if inhaled. |