

**CYCLOHEXANONE OXIME****1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Product name : Cyclohexanone oxime.
Chemical name : Cyclohexanone oxime.
Synonyms : Hydroxy-iminocyclohexane.
Chemical formula : C₆H₁₁NO.
Substance/preparation : Substance.
Use of the substance/preparation : Additive in printer ink.
Supplier's name/address : DSM Specialty Intermediates BV
P.O. Box 5489
6130 PL Sittard
The Netherlands
Emergency telephone : 31-(0)46-47655555.

2. COMPOSITION/INFORMATION ON INGREDIENTS.

Chemical name	CAS-no.	EG-no.	ANNEX-I no.	Symbol	R-phrase	%(w/w)
Cyclohexanone oxime	100-64-1	202-874-0	-	Xn	22	Min.99.0

For the complete text of the R-phrases, see section 16.

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

3. HAZARD IDENTIFICATION.

Physical/chemical hazards : Combustible solid.
On heating the substance may decompose explosively.
Finely dispersed particles in air might be explosive.

Environmental hazards : Slightly water endangering. See section 12 and 15.

Health hazards : Harmful if swallowed. May cause damage to liver and kidneys. The substance affects the blood with reversible dose related effects on haematological parameters (methaemoglobinaemia, haemolytic anaemie with compensatory erythropoiesis).

Symptom(s) of (over)exposure : See section 4.

NFPA-code (704) :

Hazards

Flammability
Health
Reactivity

**4. FIRST-AID MEASURES.****General**

: Protection of first-aiders;
Use appropriate protection (see section 8).
Move exposed person to fresh air. Remove contaminated clothing and shoes.

**CYCLOHEXANONE OXIME****Inhalation**

- Effects** : Irritation.
- Symptoms** : Sore throat, coughing, slowness, drowsiness, tender feeling.
- First-aid** : Remove victim to fresh air. Keep victim at rest. Consult a doctor.

Skin contact

- Effects** : Irritation.
- Symptoms** : Redness.
- First-aid** : Remove contaminated clothing. Wash off with plenty of water. Consult a doctor.

Eye contact

- Effects** : Irritation.
- Symptoms** : Redness, pain.
- First-aid** : Immediately wash out with plenty of water, then accompany victim to a doctor.

Ingestion

- Effects** : Irritation.
- Symptoms** : Abdominal pain, vomiting, nausea, diarrhoea, unconsciousness
- First-aid** : Wash out mouth with plenty of water. Make victim drink water. Notify a doctor.

5. FIRE-FIGHTING MEASURES.**Extinguishing media**

- Suitable** : Water spray, dry chemical, foam or carbon dioxide
- Not suitable** : Water as solid stream.

Hazardous thermal decomposition and combustion products : May produce toxic and/or corrosive products such as carbonmonoxide, nitrogen oxides (NO, NO₂...), ammonia and amines.

Protection of firefighters : Fire-fighters should wear proper protective equipment and self-contained breathing apparatus with full face-piece operated in a positive mode.

Special risks : See section 3.

6. ACCIDENTAL RELEASE MEASURES.

Personal precautions : Use appropriate protection.(see section 8).

Environmental precautions : Slightly water endangering. See section 12 and 15. If the substance has contaminated surface water, inform the appropriate authorities.

**CYCLOHEXANONE OXIME**

Methods for cleaning up : Carefully shovel and sweep up spilled material and recycle if possible. Avoid dust clouds.
Collect remainder in labelled, sealable containers for later disposal. Wash away remainder with water.
See section 8 and 13.

7. HANDLING AND STORAGE.

Handling : Use appropriate personal protection (see section 8)
Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Take measures against static discharge.

Storage : Cool, in closed containers, separated from oxidizing agents and acids.

Packaging materials : Steel containers.

Use of the substance/preparation : See section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION.

Avoid exposure first of all by technical and/or organizational measures.

Occupational exposure limits

MAC value : Not established.

Other exposure limits : Provisional occupational exposure limit:
0,2 ppm or 1 mg/m³ (DSM advice)

Engineering measures : Avoid dust generation.
Spatial exhaust, local exhaust or respiratory protection.
Dust explosion protected electrical equipment.
Earth connection against static electricity.

Hygienic measures : When using do not eat, drink or smoke. Eye wash facility.

Respiratory system : At roomtemperature the vapour pressure is 0,2 hPa.
If exposed to concentrations above the provisional occupational exposure limit use dustmask with filter for harmful dust.

Hand protection : PVC, rubber or neoprene gloves.

Breakthrough time : Not available.

Eye protection : Safety glasses with side shields, dust-goggles or fullface dustmask.

Skin protection : Use normal workclothing, (throw-away)overall advised.

Environmental exposure controls : Avoid environmental release.

Remarks : None.

9. PHYSICAL AND CHEMICAL PROPERTIES.

Appearance : Solid.

Color : White.

Odour : Typical.

pH : Not applicable.

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Boiling point	: 208°C
Melting point	: 90°C
Flash point	: 103°C
Lower explosion limit	: 1.3 vol-%.
Upper explosion limit	: 7 vol-%.
Autoignition temperature	: 265°C
Flammability	: Flammable.
Vapour pressure	: 0.2 hPa (20°C).
Vapour density (air=1)	: 3.9
Density	: 0.98
Solubility in water	: 15 g/l (20°C).
Solubility	: Soluble in methanol and ether.
Octanol/water coefficient	: Log P _{ow} = 1.1

10. STABILITY AND REACTIVITY.

General	: Stable under recommended storage and handling conditions. See section 7.
Conditions to avoid	: Uncontrolled heating. Explosive degradation may occur, when heating the substance!
Materials to avoid	: Oxidizing agents, acids.
Hazardous decomposition products	: Possibly corrosive and/or toxic decomposition products such as carbon monoxide, nitrogen oxides (NO, NO ₂ ...), ammonia and amines.

11. TOXICOLOGICAL INFORMATION.**Irritation**

Eyes	: Irritating.
Skin	: Irritating.
Respiratory system	: Irritating.

Acute toxicity

Oral	: LD ₅₀ Rat(female): 883 mg/kg LD ₅₀ Rat(male) : 1765 mg/kg
Dermal	: LD ₅₀ Rabbit : > 5000 mg/kg
Inhalation	: LC ₅₀ Rat 4h. : not available

Chronic toxicity : The substance affects the blood with reversible dose related effects on haematological parameters (methaemoglobinaemia, haemolytic anaemie with compensatory erythropoiesis).

Sensitization : No sensitizing potential.

Carcinogenicity : No data available.

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Mutagenicity	:	No data available.
Reproductive toxicity	:	No data available.
Epidemiological data	:	The substance inhibits the acetaldehyde dehydrogenase in the liver. Ethylalcohol use after exposure to the substance might therefore result in high acetaldehyde concentrations giving rise to headache, red face, nausea, vomiting, sweating and rapid pulse. (The so called "Antabuse effect").

12. ECOLOGICAL INFORMATION.

Ecotoxicity	:	96 St LC ₅₀ Fish : 250 mg/l. 48 St EC ₅₀ Daphnia: 120 mg/l. 72 St IC ₅₀ Algae : 10 mg/l.
Mobility	:	See data on vapour pressure, watersolubility and log Kow.
Persistence and degradability	:	Readily biodegradabel.
Bio-accumulative potential	:	Log P _{ow} =1.1, resulting in no bio-accumulation.
Others	:	Not available.

13. DISPOSAL CONSIDERATIONS.

Responsibility also of the receiver to have knowledge of national and local regulations.

Methods of disposal	:	Combustion in an incinerator for chemical waste according to national and local regulations. Controlled biodegradation in a wate-water treatment plant is possible.
Contaminated packaging	:	After cleaning , re-use is possible. Contaminated packaging must be disposed of in a safe way.
Hazard(s)	:	See section 3.

14. TRANSPORT INFORMATION.

UN-number	:	Not applicable.
Class ADR/RID/IMO/IATA	:	Free for any transport.

15. REGULATORY INFORMATION.

Responsibility also of the receiver to have knowledge of national and local regulations.

Labelling	:	DSM-labelling conform directive 67/548/EEC.
Labelname	:	Cyclohexanone oxime.
Symbol	:	



**CYCLOHEXANONE OXIME**

- Risk phrases** : R22 = Harmful if swallowed.
Safety phrases : S36 = Wear suitable protective clothing.
National regulations
WGK (Germany) : Class 1 = Slightly water endangering. (UBA).

16. OTHER INFORMATION.

- R-phrases of all present dangerous substances** : R22 = Harmful if swallowed.
Training advice : Handling of this substance is restricted to skilled personnel only.
Sources of key data : Literature data and/or investigation reports are available from the manufacturer.
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- Issue nr.** : 03/03-01.
Update motive : Adaption conform directive 2001/58/EC.
Replaces SDS dated : 01-01-2001.
SDS revised by : M. Arnoldussen
DSM Specialty Intermediates
Telefon: +31 46 4773980.

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