

Chemical Safety Data Sheet MSDS / SDS

Hexadecan-1-ol SDS

Revision Date:2024-04-25 Revision Number:1

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

Product name: Hexadecan-1-ol
CAS: 36653-82-4

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.
Uses advised against: none

Company Identification

Company: Chemicalbook.in
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090
Telephone: +91 9550333722

SECTION 2: Hazards identification**Classification of the substance or mixture**

Not classified.

GHS label elements, including precautionary statements

Signal word No signal word

Hazard statement(s)

none

Precautionary statement(s)**Prevention**

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**Substance**

Chemical name: Hexadecan-1-ol

Common names and
synonyms: Hexadecan-1-ol

CAS number: 36653-82-4

EC number: 253-149-0

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

no data available

Indication of immediate medical attention and special treatment needed, if necessary

Basic Treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for shock and treat if necessary . Monitor for pulmonary edema and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Higher alcohols (>3 carbons) and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

To fight fire, use foam, carbon dioxide, dry chemical.

Specific hazards arising from the chemical

no data available

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

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

Methods and materials for containment and cleaning up

AEROBIC: In a 5-day incubation study using an activated sludge seed from a municipal sewage treatment plant, 28.0% of initial 1-hexadecanol was mineralized (CO₂ measurement)(1). A theoretical BOD of 0% was observed using the AFNOR (the French norm procedure) screening test and a 5-day incubation period(2). In standard 5-day BOD tests using emulsified 1-hexadecanol, 30-60% of initial 1-hexadecanol was oxidized(3). In studies designed to examine the biodegradability of 1-hexadecanol in thin films (monolayer) on water surfaces, it was found that biological destruction of the monolayer resulted in measurable consumption of the material with all substrates that were tested; substrates included 2% settled domestic sewage in BOD dilution water, 50% Ohio River water + 50% BOD dilution water, water from a stock pond near San Antonio, TX, and other combinations of BOD dilution water and mineral supplements; oxidation rates varied with substrates; oxidation rates varied from 6.2 to 14.3% over incubation periods of 20 to 48 days(3). In Warburg respirometer tests using activated sludge and 500 mg/L of 1-hexadecanol (well above its aqueous solubility), the theoretical oxygen demand was only 0.4% after a 12-hr incubation period(4). In static culture tests examining the disappearance of 1-hexadecanol in seeded media as compared to unseeded control media over a 10-day incubation period, almost none disappeared from the control media while nearly 20% disappeared from the seeded media; in shake flask tests using seeded media and a fine granular form of 1-hexadecanol, the initial 1-hexadecanol concn of 100 mg/L decreased to only 0.25 mg/L after 30 days of incubation; the overall results of the study concluded that given sufficient time in contact with adapted microbial species under conditions otherwise non-limiting, the complete disappearance of 1-hexadecanol as an identifiable molecular species will occur; one limiting condition is the relative insolubility of 1-hexadecanol in water; it was found that microbial growth occurs more rapidly when the 1-hexadecanol substrate is added in dissolved form (eg hexane solution)(5).

SECTION 7: Handling and storage

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

In general, materials which are toxic as stored or which can decompose into toxic components ... should be stored in a cool, well-ventilated place, out of direct rays of the sun, away from areas of high fire hazard, and should be periodically inspected ... incompatible materials should be isolated from each other.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Hexadecan-1-ol			
CAS No.	36653-82-4			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Germany (AGS)	20 (1)	200 (1)	20 (1)(2)	200 (1)(2)
	Remarks			
Germany (AGS)	(1) Inhalable aerosol and vapour (2) 15 minutes reference period			

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. 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.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Paraffin like.
Colour:	Colourless.
Odour:	Faint odor
Melting point/freezing point:	51 °C. Atm. press.:Ca. 101.3 kPa. Remarks:Pour point.
Boiling point or initial boiling point and boiling range:	319 °C. Atm. press.:101.3 kPa. Remarks:Equilibrium boiling point (corrected).
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	Ca. 149 °C. Atm. press.:101.3 kPa.
Auto-ignition temperature:	Ca. 272 °C. Atm. press.:Ca. 1 atm.
Decomposition temperature:	no data available

pH:	no data available
Kinematic viscosity:	kinematic viscosity (in mm ² /s) = 3.394. Temperature: 100.0 °C.
Solubility:	Slightly soluble in alcohol; soluble in acetone; very soluble in ether, benzene, chloroform
Partition coefficient n-octanol/water:	log Pow = 6.7.
Vapour pressure:	Ca. 0.003 mBar. Temperature: Ca. 38 °C. Remarks: The temperature is measured to be 100 °F.
Density and/or relative density:	0.889 g/cm ³ . Temperature: 16 °C.
Relative vapour density:	8.34 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

Flammable when exposed to heat or flame

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 5 g/kg

Inhalation: Inhalation - rat (male/female) - > 1.5 mg/L air.

Dermal: LD50 - rabbit (male/female) - 8 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - > 0.4 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 0.01 mg/L - 48 h.

Toxicity to algae: ELO - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - 10 mg/L - 96 h.

Toxicity to microorganisms: other fungi: see remarks.

Persistence and degradability

AEROBIC: In a 5-day incubation study using an activated sludge seed from a municipal sewage treatment plant, 28.0% of initial 1-hexadecanol was mineralized (CO₂ measurement)(1). A theoretical BOD of 0% was observed using the AFNOR (the French norm procedure) screening test and a 5-day incubation period(2). In standard 5-day BOD tests using emulsified 1-hexadecanol, 30-60% of initial 1-hexadecanol was oxidized(3). In studies designed to examine the biodegradability of 1-hexadecanol in thin films (monolayer) on water surfaces, it was found that biological destruction of the monolayer resulted in measurable consumption of the material with all substrates that were tested; substrates included 2% settled domestic sewage in BOD dilution water, 50% Ohio River water + 50% BOD dilution water, water from a stock pond near San Antonio, TX, and other combinations of BOD dilution water and mineral supplements; oxidation rates varied with substrates; oxidation rates varied from 6.2 to 14.3% over incubation periods of 20 to 48 days(3). In Warburg respirometer tests using activated sludge and 500 mg/L of 1-hexadecanol (well above its aqueous solubility), the theoretical oxygen demand was only 0.4% after a 12-hr incubation period(4). In static culture tests examining the disappearance of 1-hexadecanol in seeded media as compared to unseeded control media over a 10-day incubation period, almost none disappeared from the control media while nearly 20% disappeared from the seeded media; in shake flask tests using seeded media and a fine granular form of 1-hexadecanol, the initial 1-hexadecanol concn of 100 mg/L decreased to only 0.25 mg/L after 30 days of incubation; the overall results of the study concluded that given sufficient time in contact with adapted microbial species under conditions otherwise non-limiting, the complete disappearance of 1-hexadecanol as an identifiable molecular species will occur; one limiting condition is the relative insolubility of 1-hexadecanol in water; it was found that

microbial growth occurs more rapidly when the 1-hexadecanol substrate is added in dissolved form (eg hexane solution)(5).

Bioaccumulative potential

In a 3-day static exposure study using golden orfe fish (*Leuciscus idus melanotus*), a 1-hexadecanol bioconcentration factor (BCF) of 56 was observed(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC), provided the compound is not metabolized by the organism(SRC). A 24-hr BCF of 17000 was observed in algae (*Chlorella fusca*)(1).

Mobility in soil

The Koc of 1-hexadecanol is estimated as 25,000(SRC), using a water solubility of 4.122×10^{-2} (1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 1-hexadecanol is expected to be immobile in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer: 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 in this document is based on the present 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. We as supplier shall not be held liable for any