

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Hexadecan-1-ol

1.2 Other means of identification

Product number -
Other names 1-Hexadecanol; Acrylsaeure-hexadecylester; Palmityl acrylate

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd
Address 513, A3 / F, green space future center, Fengxian District,
Shanghai, 201400, China
Telephone +86-4000-6969-66

1.5 Emergency phone number

Emergency phone number +86-4000-6969-66
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT
+8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s) No symbol.
Signal word No signal word
Hazard statement(s) none
Precautionary statement(s)
Prevention none
Response none
Storage none
Disposal none

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Hexadecan-1-ol	Hexadecan-1-ol	36653-82-4	253-149-0	100%

SECTION 4: First-aid measures

4.1 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.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 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: Fire-fighting measures

5.1 Suitable extinguishing media

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

5.2 Specific hazards arising from the chemical

no data available

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 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.

6.2 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.

6.3 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

7.1 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.

7.2 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

8.1 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

8.2 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.

8.3 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

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Flammable when exposed to heat or flame

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 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

12.1 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: EL0 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 10 mg/L - 96 h.
- Toxicity to microorganisms: other fungi: see remarks.

12.2 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).

12.3 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).

12.4 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.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 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.)

14.2 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.)

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Hexadecan-1-ol	Hexadecan-1-ol	36653-82-4	253-149-0
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

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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/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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