

1-Hexadecanol SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- * Product Name: 1-Hexadecanol
- * Catalog Number: S4173
- * CAS Number: 36653-82-4
- * IUPAC Name: 1-Hexadecanol

Relevant identified uses and uses advised against

- * Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- * Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- * Company: Selleck Chemicals
- * TollFree: +1 877 796-6397
- * Tel: +1 832 582-8158
- * Fax: +1 832 582-8590

Emergency telephone number

- * Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Serious eye irritation: Category 2. H319

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Warning

Hazard statement(s)

H319: Causes serious eye irritation

Precautionary statement(s)

None.

Prevention

P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.
P337+P317: If eye irritation persists: Get medical help.
P338: Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: 1-Hexadecanol

CAS Number: 36653-82-4

PubChem CID: 2682

Molecular formula: C₁₆H₃₄O

Molecular weight: 242.44 g/mol

IUPAC name: hexadecan-1-ol

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Move to fresh air. Keep at rest in a position comfortable for breathing. Seek medical attention if symptoms persist.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation develops.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: 175 °C

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

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).

ANAEROBIC: The anaerobic degradation of 14-C-labeled 1-hexadecanol was studied in model sludge digester over a 28-day incubation period(1); 25.1% of radioactivity was recovered in methane gas and 72.0% was recovered in CO₂ gas(1).

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

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.

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.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

Store in original container. Keep upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use in a well-ventilated area. Chemical fume hood recommended for powder handling.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Respiratory protection usually not required under normal use with adequate ventilation.

Use N95 respirator for large-scale powder handling.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Liquid; Wet Solid; Other Solid; Liquid; Dry Powder; Other Solid

b) Odor: Faint odor

c) Odor threshold: No data available

d) pH: No data available

e) Melting point/freezing point: 49.3 °C

f) Initial boiling point and boiling range: 334 °C at 760 mm Hg

g) Flash point: 175 °C

h) Evaporation rate: No data available

i) Flammability (solid, gas): No data available

j) Upper/lower flammability or explosive limits: No data available

k) Vapor pressure: 0.00000306 [mmHg]

- l) Vapor density: No data available
- m) Relative density: 0.8187 at 50 °C/4 °C
- n) Water solubility: Insoluble
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 7.3
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: 53 mPa-s (=cP) at 75 °C
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 20.2 Å²
Complexity: 123

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂).
See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

No data available.

Serious eye damage/eye irritation:

Causes serious eye irritation (H319).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

Reproductive toxicity:

No data available.

Specific target organ toxicity (single exposure):

No data available.

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

No indication of carcinogenicity to humans (not listed by IARC).

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50 *Scenedesmus subspicatus* (Algae) 676 mg/L/72 hr; Effect: cell multiplication inhibition test

1-Hexadecanol's production and use in perfumery, foam stabilizer in detergents, cosmetics, chemical intermediate, detergents, and pharmaceuticals may result in its release to the environment through various waste streams. Its use to retard evaporation of water from reservoirs and growing plants will result in its direct release to the environment. If released to air, a vapor pressure of 6×10^{-6} mm Hg at 25 °C indicates 1-hexadecanol will exist in both the vapor and particulate phases in the atmosphere. Vapor-phase 1-hexadecanol will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 16 hours. Particulate-phase 1-hexadecanol will be removed from the atmosphere by wet or dry deposition. If released to soil, 1-hexadecanol is expected to have no mobility based upon an estimated Koc of 25,000. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 4.6×10^{-2} atm-cu m/mole. However, adsorption to soil is expected to attenuate volatilization. Various biological screening studies have demonstrated that 1-hexadecanol biodegrades both aerobically and anaerobically. If released into water, 1-hexadecanol is expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces i

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): 7.3

Potential for bioaccumulation exists (Log P > 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

No other adverse ecological effects identified.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

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

Not applicable.

15. REGULATORY INFORMATION

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

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: Hexadecanol
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- FIFRA Requirements: As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active
- FDA Requirements: Diluents in color additive mixtures for food use exempt from certification. The following substances may be safely used as diluents in color additive mixtures for food use exempt from certification, subject to the condition that each straight color in the mixture has been exempted from certification

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.