

SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

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1. Identification

1.1 GHS Product identifier

Product name dodecan-1-ol

1.2 Other means of identification

Product number -

Other names Dodecyl Alcohol

1.3 Recommended use of the chemical and restrictions on use

Identified uses For industry use only. Fragrances;Solvents

Uses advised against no data available

2. Hazard identification

2.1 Classification of the substance or mixture

Eye irritation, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H319 Causes serious eye irritation

H400 Very toxic to aquatic life

H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

P391 Collect spillage.

Storage

none

Disposal

P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3. Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
dodecan-1-ol	dodecan-1-ol	112-53-8	none	100%

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

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

If inhaled

Fresh air, rest. Seek medical attention if you feel unwell.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

In case of eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

If swallowed

Rinse mouth. Rest. Do NOT induce vomiting. Seek medical attention if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed

Liquid will cause burning of the eyes and may irritate skin. (USCG, 1999)

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

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Higher alcohols (>3 carbons) and related compounds/

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Wear self contained breathing apparatus for fire fighting if necessary.

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.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Ventilation. Sweep spilled substance into sealable containers. If liquid: collect leaking liquid in containers. Absorb remaining liquid in inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Accidental Release Measures: ... Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Cool. Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Keep tightly closed. Store in a cool dry place.

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. 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

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	Colorless liquid at room temperature or white, colorless crystalline solid below 24°C. Unpleasant fatty odor at high concentrations, floral odor at low concentrations.
Colour	Leaflets from dilute alcohol
Odour	CHARACTERISTIC FATTY ODOR; UNPLEASANT AT HIGH CONCEN BUT DELICATE & FLORAL ON DILUTION
Melting point/ freezing point	22-27°C
Boiling point or initial boiling point and boiling range	260-262°C(lit.)
Flammability	Combustible.
Lower and upper explosion limit / flammability limit	Flammability limits = 0.6 to 5.1 vol%
Flash point	121°C
Auto-ignition temperature	260°C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	18.8 mPa-s at 20°C
Solubility	In water:insoluble
Partition coefficient n-octanol/water (log value)	log Kow = 5.13
Vapour pressure	0.1 mm Hg (20 °C)
Density and/or relative density	0.833g/mL at 25°C(lit.)
Relative vapour density	7.4 (vs air)
Particle characteristics	no data available

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Combustible when it is exposed to heat or flame. DODECANOL is an alcohol. Flammable and/or toxic gases are generated by the combination of alcohols with alkali metals, nitrides, and strong reducing agents. They react with oxoacids and carboxylic acids to form esters plus water. Oxidizing agents convert them to aldehydes or ketones. Alcohols exhibit both weak acid and weak base behavior. They may initiate the polymerization of isocyanates and epoxides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible materials: Strong oxidizing agents.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 12,800 mg/kg
- Inhalation: LC50 Rat inhalation >1050 mg/cu m (138 ppm)
- Dermal: no data available

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

12. Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow) weight 0.12 g; Conditions: flow-through bioassay, water hardness 45.5 mg/L CaCO₃, temp: 25 +/- 1°C, pH 7.5, dissolved oxygen >60% of saturation; Concentration: 1.01 mg/L for 96 hr
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: A 5-day theoretical BOD of 20% was observed for 1-dodecanol in an aerobic screening test using a sewage inoculum(1). A 5-day theoretical BOD of 23.2% was observed for 1-dodecanol in a standard BOD dilution test using a mixed microbial inoculum(2-3). A 5-day theoretical BOD of 27-29.7% was observed for 1-dodecanol in a standard BOD aerobic screening test using a sewage inoculum or an acclimated activated sludge inoculum(4); using a Warburg respirometer technique and a sewage inoculum, a 6-hr theoretical BOD of 15.2% was observed(4). Using a Warburg respirometer technique and various activated sludge inoculum, respective 6-hr, 12-hr and 24-hr theoretical BODs of 4.5, 10.1 and 13.4% were observed(5). 1-Dodecanol was found to be readily biodegraded(6).

12.3 Bioaccumulative potential

An estimated BCF of 48 was calculated in fish for 1-dodecanol(SRC), using a log Kow of 5.13(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC).

12.4 Mobility in soil

Koc values of 2042-3388 were reported for 1-dodecanol in humic acid(1). According to a classification scheme(2), this Koc range suggests that 1-dodecanol is expected to have slight mobility in soil. Koc values of 2570-6574, 2337-11,184, 7700 and 16,700-17,981 were reported for 1-dodecanol in activated sludge, sediment, suspended solids and suspended solids with activated sludge, respectively(1).

12.5 Other adverse effects

no data available

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.

14. Transport information

14.1 UN Number

ADR/RID: UN3077

IMDG: UN3077

IATA: UN3077

14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6 Special precautions for user

no data available

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

no data available

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
dodecan-1-ol	dodecan-1-ol	112-53-8	none
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.

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/>

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