

SAFETY DATA SHEET

1. IDENTIFICATION

Product name: 6-METHYL-1-HEPTANOL

CAS No. : 26952-21-6

Brand: Macklin

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2. HAZARDS IDENTIFICATION

GHS classification

PHYSICAL HAZARDS

HEALTH HAZARDS

ENVIRONMENTAL HAZARDS

GHS label elements, including precautionary statements

Pictograms or hazard symbols

Signal word

Warning

Hazard statements

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statements

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name

Isooctan-1-ol

Components:6-METHYL-1-HEPTANOL

CAS No.:26952-21-6

Chemical Formula:C₈H₁₈O

4. FIRST AID MEASURES

4.1

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

4.2

Most important symptoms/effects, acute and delayed

Inhalation hazard slight. Skin contact results in moderate irritation. Liquid contact with eyes causes severe irritation and possible eye damage. (USCG, 1999)

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

5. FIRE-FIGHTING MEASURES

5.1

Suitable extinguishing media

Extinguish with water, foam, dry chemical, or carbon dioxide, cool exposed containers with water.

5.2

Specific hazards arising from the chemical

Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. Substance may be transported hot. For hybrid vehicles, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. If molten aluminum is involved, refer to ERG Guide 169. (ERG, 2016)

5.3

Special protective actions for fire-fighters

Use powder, carbon dioxide, foam.

6. ACCIDENTAL RELEASE MEASURES

6.1

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3

Methods and materials for containment and cleaning up

Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

7. HANDLING AND STORAGE

Precautions for safe handling

NO open flames. Above 82°C use a closed system and ventilation. 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

Separated from strong oxidants.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limit values

TLV: 50 ppm as TWA; (skin)

Biological limit values

no data available

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.

Set up emergency exits and the risk-elimination area.

Personal protective equipment

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Isooctyl alcohol is a clear colorless liquid with a faint pleasant odor. Flash point 180°F. Less dense than water and insoluble in water. Vapors are heavier than air. Used as a solvent, in the making of cutting and lubricating oils, in hydraulic fluids, and in the production of other chemicals.

Colour

Clear, colorless liquid.

Odour

Mild

Melting point/freezing point

<-76°C

Boiling point or initial boiling point and boiling range

179.2°C at 760 mmHg

Flammability

Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.

Lower and upper explosion limit/flammability limit

Lower flammable limit: 0.9% by volume

Flash point

71.1°C

Auto-ignition temperature

530° F (USCG, 1999)

Decomposition temperature

no data available

pH

no data available

Kinematic viscosity

10.6 centipoise at 15 deg C

Solubility

Insoluble (NIOSH, 2016)

Partition coefficient n-octanol/water

log Kow = 2.73 (est)

Vapour pressure

1.03 mm Hg (USCG, 1999)

Density and/or relative density

0.821 g/cm³

Relative vapour density

(air = 1): 4.5

Particle characteristics

no data available

10. STABILITY AND REACTIVITY

10.1

Reactivity

Reacts with strong oxidants.

Reacts violently with strong oxidants and strong bases. Decomposes on heating and on burning.

10.2

Chemical stability

no data available

10.3

Possibility of hazardous reactions

ISOCTYL ALCOHOL attacks plastics. REF [Handling Chemicals Safely, 1980. p. 236]. Acetyl bromide reacts violently with alcohols or water, [Merck 11th ed., 1989]. Mixtures of alcohols with concentrated sulfuric acid and strong hydrogen peroxide can cause explosions. Example: An explosion will occur if dimethylbenzylcarbinol is added to 90% hydrogen peroxide then acidified with concentrated sulfuric acid. Mixtures of ethyl alcohol with concentrated hydrogen peroxide form powerful explosives. Mixtures of hydrogen peroxide and 1-phenyl-2-methyl propyl alcohol tend to explode if acidified with 70% sulfuric acid, [Chem. Eng. News 45(43):73(1967); J. Org. Chem. 28:1893(1963)]. Alkyl hypochlorites are violently explosive. They are readily obtained by reacting hypochlorous acid and alcohols either in aqueous solution or mixed aqueous-carbon tetrachloride solutions. Chlorine plus alcohols would similarly yield alkyl hypochlorites. They decompose in the cold and explode on exposure to sunlight or heat. Tertiary hypochlorites are less unstable than secondary or primary hypochlorites, [NFPA 491 M, 1991]. Base-catalysed reactions of isocyanates with alcohols should be carried out in inert solvents. Such reactions in the absence of solvents often occur with explosive violence, [Wischmeyer(1969)].

10.4

Conditions to avoid

no data available

10.5

Incompatible materials

Reacts with strong oxidants.

10.6

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 Rat oral 1.5 g/kg

Inhalation: no data available

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

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects

on the central nervous system.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking.

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C.

12. ECOLOGICAL INFORMATION

12.1

Toxicity

Toxicity to fish: LC50 *Lepomis macrochirus* (Bluegill) 30 mg/L/24 hr, static

Toxicity to daphnia and other aquatic invertebrates: EC50 *Daphnia magna* (Water flea; intoxication, immobilization) 115 mg/L/24 hr; static /formulated product

Toxicity to algae: EC50 *Scenedesmus subspicatus* (Green algae; cell multiplication inhibition) 14 mg/L/48 hr; static /formulated product

Toxicity to microorganisms: no data available

12.2

Persistence and degradability

Data regarding the biodegradation of isooctyl alcohol were not available(SRC, 2006). Yet, a number of aerobic and anaerobic biological screening studies, which utilized settled waste water, sewage, or activated sludge for inocula, have demonstrated that n-octanol is biodegradable(1-9). Since isooctyl alcohol is a mixture of isomers where most of the molecule is a straight chain alcohol, the results of the studies on n-octanol would suggest rapid biodegradation where acclimation has occurred(SRC).

12.3

Bioaccumulative potential

An estimated BCF of 16 was calculated for isooctyl alcohol(SRC), using a water solubility of 640 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4

Mobility in soil

The Koc of isooctyl alcohol is estimated as 125(SRC), using a water solubility of 640 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that isooctyl alcohol is expected to have high mobility in soil.

12.5

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

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: UN3082 (For reference only, please check.)

IMDG: UN3082 (For reference only, please check.)

IATA: UN3082 (For reference only, please check.)

14.2

UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please

check.)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

14.3

Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)

IMDG: 9 (For reference only, please check.)

IATA: 9 (For reference only, please check.)

14.4

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (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

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

Isooctan-1-ol

Isooctan-1-ol

26952-21-6

248-133-5

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.

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and

toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.