

Chemical Safety Data Sheet MSDS / SDS

Heptan-3-one 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: Heptan-3-one

CAS: 106-35-4

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

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

Flammable liquids, Category 3

Eye irritation, Category 2

Acute toxicity - Category 4, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour

H319 Causes serious eye irritation

H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

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

P264 Wash ... thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

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

Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: Heptan-3-one

Common names and synonyms: Heptan-3-one

CAS number: 106-35-4

EC number: 203-388-1

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

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. Rest. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Short term exposure can cause irritation of eyes, nose, throat and lungs. High concentrations may cause headache, dizziness or unconsciousness. (USCG, 1999)

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

INHALATION. Symptoms: Cough. Dizziness. Headache. Sore throat. Unconsciousness. First aid: Fresh air, rest. Refer for medical attention. SKIN: Symptoms: Dry skin. Redness. First aid: Remove contaminated clothes. Rinse skin with plenty of water or shower. EYES: Symptoms: Redness. Pain. First aid: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor. INGESTION: First aid: Rinse mouth. Rest. Refer for medical attention.

SECTION 5: Firefighting measures

Suitable extinguishing media

Fire Extinguishing Agents Not to Be Used: Water. Fire Extinguishing Agents: Dry chemical, alcohol foam, or carbon dioxide. (USCG, 1999)

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating vapors and toxic gases, such as carbon dioxide and carbon monoxide, may be formed when involved in fire. (USCG, 1999)

Special protective actions for fire-fighters

Use powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

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 metal containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

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 metal containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

Methods and materials for containment and cleaning up

1. remove all ignition sources. 2. ventilate area of spill or leak. 3. for small quantities, absorb on paper towels. evaporate in safe place (such as fume hood). allow ... evaporating vapors to completely clear the hood ductwork. burn the paper in suitable location away from combustible materials.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 46°C use a closed system, ventilation and explosion-proof electrical equipment. 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

Fireproof. Prior to working with this chemical you should be trained on its proper handling and storage. Ethyl butyl ketone must be stored to avoid contact with oxidizers such as peroxides, chlorates, perchlorates, permanganates, and nitrates, because violent reactions occur. Store in tightly closed containers in a cool, well-ventilated area away from heat. Sources of ignition such as smoking and open flames are prohibited where ethyl butyl ketone is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 50 ppm as TWA; 75 ppm as STEL. MAK: 47 mg/m³, 10 ppm; peak limitation category: I(2); pregnancy risk group: D. EU-OEL: 95 mg/m³, 20 ppm as TWA

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 safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

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|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Physical state: | Ethyl butyl ketone is a colorless odorless liquid with a mild fruity odor. Flash point 140°F. |
| Colour: | Clear liquid |
| Odour: | GREEN ODOR |
| Melting point/freezing point: | 360°C(dec.)(lit.) |
| Boiling point or initial boiling point and boiling range: | 148°C |
| Flammability: | Class II Combustible Liquid: Fl.P. at or above 100°F and below 140°F. |
| Lower and upper explosion limit/flammability limit: | Lower flammable limit: 1.4% by volume; Upper flammable limit: 8.8% by volume |
| Flash point: | 46°C |

| | |
|----------------------------------------|----------------------|
| Auto-ignition temperature: | no data available |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | 0.84 cP at 20 deg C |
| Solubility: | 1 % (NIOSH, 2016) |
| Partition coefficient n-octanol/water: | log Kow = 1.73 (est) |
| Vapour pressure: | 4.22mmHg at 25°C |
| Density and/or relative density: | 0.819 |
| Relative vapour density: | 3.93 (Air = 1) |
| Particle characteristics: | no data available |

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

PROBLEM OF FLAMMABILITY SHOULD NOT BE GREAT UNLESS MATERIAL IS HANDLED @ ELEVATED TEMP. ETHYL BUTYL KETONE is reactive with many acids and bases liberating heat and flammable gases (e.g., H₂). The amount of heat may be sufficient to start a fire in the unreacted portion. Reacts with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H₂) and heat. Incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides. May react violently with aldehydes,

HNO₃, HNO₃ + H₂O₂, and HClO₄. Irritating vapors and toxic gases may be formed when involved in fire (USCG, 1999).

Conditions to avoid

no data available

Incompatible materials

Forms explosive mixture with air. Violent reaction with strong oxidizers, acetaldehyde, perchloric acid. Attacks some plastics, rubber, and coatings.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

Oral: LD₅₀ Rat oral 2760 mg/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. Exposure could cause lowering of consciousness.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: A 3.7 percent theoretical BOD was observed for 3-heptanone (initial concn of 500 ppm) in a Warburg respirometer after 1 day of incubation with activated sludge inocula at 20 deg C(1).

Bioaccumulative potential

An estimated BCF of 6 was calculated in fish for 3-heptanone(SRC), using a water solubility of 4,300 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).

Mobility in soil

The Koc of 3-heptanone is estimated as 44(SRC), using a water solubility of 4,300 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 3-heptanone is expected to have very high mobility 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: UN1224 (For reference only, please check.)

IMDG: UN1224 (For reference only, please check.)

IATA: UN1224 (For reference only, please check.)

UN Proper Shipping Name

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

IMDG: KETONES, LIQUID, N.O.S. (For reference only, please check.)

IATA: KETONES, LIQUID, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

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

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

IATA: II (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

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