Chemical Safety Data Sheet MSDS / SDS

Pentane-2,4-dione SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Pentane-2,4-dione

CAS: 123-54-6

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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Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 3
Acute toxicity - Category 4, Oral

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H226 Flammable liquid and vapour
H302 Harmful if swallowed

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.
P270 Do not eat, drink or smoke when using this product.

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.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.

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:	Pentane-2,4-dione
Common names and synonyms:	Pentane-2,4-dione
CAS number:	123-54-6
EC number:	204-634-0
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

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

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. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation causes dizziness, headache, nausea, vomiting and loss of consciousness. Contact with liquid irritates eyes. (USCG, 1999)

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

FIRST AID: Inhalation--Fresh air, rest. Artificial respiration if indicated. Refer for medical attention. Skin--Remove contaminated clothes. Rinse and then wash skin with water and soap. Eyes--First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor. Ingestion--Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SECTION 5: Firefighting measures

Suitable extinguishing media

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

Specific hazards arising from the chemical

Behavior in Fire: Vapor is heavier than air and may travel to a source of ignition and flash back. (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. Do NOT let this chemical enter the environment. Ventilation. Collect leaking liquid in sealable containers. Wash away remainder with plenty of water.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Ventilation. Collect leaking liquid in sealable containers. Wash away remainder with plenty of water.

Methods and materials for containment and cleaning up

Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water. Do NOT let this chemical enter the environment (extra personal protection: filter respirator for organic gases and vapors).

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 34°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. Separated from strong oxidants. Keep in the dark.Fireproof. Separated from strong oxidants. Keep in the dark.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 25 ppm as TWA; (skin).MAK: 83 mg/m3, 20 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: C

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 or face shield.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Pentane-2,4-dione is a colorless or yellow colored liquid. Less dense than water. Vapors are heavier than air. Used as a solvent in paints and varnishes.
Colour:	Colorless or slightly yellow liquid
Odour:	Pleasant odor
Melting point/freezing point:	-23°C(lit.)
Boiling point or initial boiling point and boiling range:	140.4°C(lit.)
Flammability:	Flammable.
Lower and upper explosion limit/flammability limit:	Lower flammable limit in air: 2.4%; Upper flammable limit in air: 11.6%
Flash point:	38°C
Auto-ignition temperature:	662°F
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	0.6 mPa.s at 20 deg C
Solubility:	Miscible in ethanol, ether, acetone chloroform
Partition coefficient n-octanol/water:	log Kow = 0.40

Vapour pressure:	6 mm Hg (20 °C)
Density and/or relative density:	0.975g/mLat 25°C(lit.)
Relative vapour density:	3.5 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance may polymerize under the influence of light. Reacts with strong oxidants, bases and reducing agents.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable liquid when exposed to heat or flame.The vapour is heavier than air.Ketones, such as PENTANE-2,4-DIONE, are 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 of the ketone. Ketones react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H2) and heat. Ketones are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides. They react violently with aldehydes, HNO3, HNO3 + H2O2, and HClO4. May dissolve plastics (USCG, 1999).

Conditions to avoid

no data available

Incompatible materials

Incompatible with oxidizing materials.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat (male) oral 760 mg/kg

Inhalation: LC50 Rat inhalation 1224 ppm/4 hr (5.1 mg/L/4 hr)

Dermal: LD50 Rabbit percutaneous 810 mg/kg

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 nervous system. This may result in tissue lesions.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the thymus, lungs, central nervous system and nasal passage.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 Pimephales promelas (fathead minnow) 200 mg/L/24 hr /Conditions of bioassay not specified in source examined

Toxicity to daphnia and other aquatic invertebrates: EC50 Daphnia magna (water flea) 75 mg/L/48 hr; Effect: mortality or immobility; closed static bioassay, total hardness (CaCO3) 240 mg/L, pH 8.0 + or - 0.3, aerated (before use), carbon-filtered well water, 23 deg C, 16 hr photoperiod ... /Reagent grade

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: In a screening study using settled sewage seed at 20 deg C, 5.6, 40.0, 62.8, and 69.6 % of theoretical B.O.D. was determined after 5, 10, 15, and 20 incubation days, respectively(1).

Bioaccumulative potential

An estimated BCF of 3.2 was calculated in fish for acetyl acetone(SRC), using a log Kow of 0.40(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 acetyl acetone is estimated as 39(SRC), using a log Kow of 0.40(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that acetyl acetone 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: UN2310 (For reference only, please check.)
IMDG: UN2310 (For reference only, please check.)
IATA: UN2310 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: PENTANE-2,4-DIONE (For reference only, please check.)
IMDG: PENTANE-2,4-DIONE (For reference only, please check.)
IATA: PENTANE-2,4-DIONE (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: III (For reference only, please check.)

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