

Otto Chemie Pvt Ltd

101, Aarkay Ruby Industrial Estate(1B), Opp Shree Narayan Industrial Estate,
Chinchpada, Vasai East, Waliv, Maharashtra 401208.

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MATERIAL SAFETY DATA SHEET

1. Identification

1.1GHS Product identifier

4-Hydroxy 4-methyl 2-pentanone, 99%

Code: H 1635

2. Hazard identification

2.1Classification of the substance or mixture

Eye irritation, Category 2

2.2GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H319 Causes serious eye irritation

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

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

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.

Storage

none

Disposal

none

2.3Other hazards which do not result in classification

none

3. Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
diacetone alcohol	diacetone alcohol	123-42-2	none	100%

4. First-aid measures

4.1Description 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.

In case of skin contact

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

In case of eye contact

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

If swallowed

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

4.2Most important symptoms/effects, acute and delayed

Vapor is irritating to the mucous membrane of the eye and respiratory tract. Inhalation can cause dizziness, nausea, some anesthesia. Very high concentrations have a narcotic effect. The liquid is not highly irritating to the skin but can cause dermatitis. (USCG, 1999)

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

Absorption, Distribution and Excretion

ABSORPTION ... OCCURS READILY FROM THE LUNG.

5. Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

ALCOHOL FOAM, FOAM, CARBON DIOXIDE, DRY CHEMICAL

5.2Specific hazards arising from the chemical

Excerpt from ERG Guide 129 [Flammable Liquids (Water-Miscible / Noxious)]: 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

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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. (ERG, 2016)

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

Remove all ignition sources. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Cover the spilled material with inert absorbent. Carefully collect remainder.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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

Fireproof. Separated from acids, bases, amines and oxidants.... MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL-VENTILATED PLACE, OUT OF THE DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED ... INCOMPATIBLE MATERIALS SHOULD BE ISOLATED ...

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 50 ppm (240 mg/cu m).

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

Clear, colorless liquid

Colour

COLORLESS LIQUID

Odour

FAINT PLEASANT ODOR

Melting point/ freezing point

-44\u00b0C(lit.)

Boiling point or initial boiling point and boiling range

166\u00b0C(lit.)

Flammability

Class II Combustible Liquid: Fl.P. at or above 37.78\u00b0C and below 60\u00b0C. Flammable. See Notes

Lower and upper explosion limit / flammability limit

1.8% LOWER & 6.9% UPPER

Flash point

58\u00b0C

Auto-ignition temperature

603.33\u00b0C (USCG, 1999)

Decomposition temperature

no data available

pH

no data available

Kinematic viscosity

no data available

Solubility

In water: MISCIBLE

Partition coefficient n-octanol/water (log value) log Kow=

-0.098 (est)

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Vapour pressure	<1 mm Hg (20 \u00b0C)
Density and/or relative density	0.931g/mL at 25\u00b0C(lit.)
Relative vapour density	4 (vs air)
Particle characteristics	no data available

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

DECOMPOSED BY PROLONGED EXPOSURE TO ALKALIS & BY DISTILLATION AT ATMOSPHERIC PRESSURE

10.3 Possibility of hazardous reactions

MODERATE WHEN EXPOSED TO HEAT OR FLAME ...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

Strong oxidizers, strong alkalis.

10.6 Hazardous decomposition products

When heated to decompose it emits acrid smoke and fumes.

11. Toxicological information

Acute toxicity

Oral: LD50 Rat oral 4.0 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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

12.1 Toxicity

Toxicity to fish: LC50 *Lepomis macrochirus* 420 ppm/96 hr (static bioassay in fresh water at 23\u00b0C, mild aeration applied after 24 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

Two sets of tests using acclimated mixed microbial cultures as inoculum gave percent theoretical BOD of 47%(1) and 46%(2) after 5 days for 4-hydroxy-4-methyl-2-pentanone under aerobic conditions(1,2). A percent theoretical BOD of 3% was observed after 5 days in screening tests using the standard dilution technique under aerobic conditions and effluent sewage from a biological sanitary waste treatment plant as inoculum; 31% theoretical BOD was observed after 5 days using adapted effluent sewage(3). No information regarding biodegradation in natural media was found(SRC).

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12.3 Bioaccumulative potential

An estimated BCF of 0.50 can be calculated(SRC) from an estimated log Kow of -0.098(2) using a recommended regression equation(1). Based upon the estimated BCF and the reported infinite solubility of the compound in water(3), 4-hydroxy-4-methyl-2-pentanone will not be expected to significantly bioconcentrate in aquatic organisms(SRC).

12.4 Mobility in soil

An estimated Koc of 21 can be calculated(SRC) from an estimated log Kow of -0.098(2) using a recommended regression equation(1). Based upon the estimated Koc and the reported infinite solubility of the compound in water(3), 4-hydroxy-4-methyl-2-pentanone will not be expected to strongly adsorb to sediment or suspended particulate matter(4,SRC). It will be expected to exhibit very high mobility in soil(4), and therefore, 4-hydroxy-4-methyl-2-pentanone may leach through soil to groundwater if it does not volatilize or biodegrade first(SRC).

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: UN1148

IMDG: UN1148

IATA: UN1148

14.2 UN Proper Shipping Name

ADR/RID: DIACETONE ALCOHOL

IMDG: DIACETONE ALCOHOL

IATA: DIACETONE ALCOHOL

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

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 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
diacetone alcohol	diacetone alcohol	123-42-2	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			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.

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.