

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Acetaldehyde-d4


2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

According to Regulation (EC) No1272/2008  
Flammable liquids (Category 1)  
Carcinogenicity (Category 2)  
Eye irritation (Category 2)  
Specific target organ toxicity - single exposure (Category 3)

According to European Directive 67/548/EEC as amended.  
Extremely flammable. Limited evidence of a carcinogenic effect. Irritating to eyes and respiratory system.

Label elements

Pictogram	
Signal word	Danger
Hazard statement(s)	
H319	Causes serious eye irritation.
H224	Extremely flammable liquid and vapour.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P281	Use personal protective equipment as required.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Hazard symbol(s)	
F+	Extremely flammable
Xn	Harmful
R-phrases(s)	
R12	Extremely flammable.
R36/37	Irritating to eyes and respiratory system.
R40	Limited evidence of a carcinogenic effect.
S-phrases(s)	
S16	Keep away from sources of ignition - No smoking.
S33	Take precautionary measures against static discharges.
S36/37	Wear suitable protective clothing and gloves.

Other hazards

Photosensitizer., Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Tetradeuteroacetaldehyde

Formula : C2D4O

Molecular Weight : 48,08 g/mol

CAS-No.	EC-No.	Classification	Concentration
[2H4]Acetaldehyde 1632-89-9	-	-	-

Flam. Liq. 1; Carc. 2; Eye Irrit. 2; STOT SE 3; H319, H224, H335, H351

F+, Xn, Carc. Cat.3, R12 - R36/37 - R40

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice

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

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20 °C

Store under inert gas. Handle and open container with care. Air sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	clear, liquid
Colour	colourless

Safety data

pH	no data available
Melting point	-125 °C - lit.
Boiling point	21 °C - lit.
Flash point	-40 °C - closed cup
Ignition temperature	193 °C
Lower explosion limit	4 %(V)
Upper explosion limit	57 %(V)
Vapour pressure	3.220,3 hPa at 55 °C 1.008,5 hPa at 20 °C
Density	0,856 g/mL at 25 °C
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 0,5
Relative vapour density	1,52 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

no data available

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 661 mg/kg  
Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change.  
Behavioral:Altered sleep time (including change in righting reflex). Lungs, Thorax, or Respiration:Dyspnea.

Inhalation: no data available

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation

Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans ([2H4]Acetaldehyde)

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Pulmonary edema. Effects may be delayed., Nausea, Vomiting, Headache, Blurred vision, Unconsciousness

Additional Information

RTECS: no data available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Pinephales promelas (fathead minnow) - 31 mg/l - 96 h LC100 - Leuciscus idus (Golden orfe) - 124 - 156 mg/l - 48 h
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Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 48 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR/RID

UN-Number: 1089 Class: 3	Packing group: I
Proper shipping name: ACETALDEHYDE	

IMDG

UN-Number: 1089 Class: 3	Packing group: I	EMS-No: F-E, S-D
Proper shipping name: ACETALDEHYDE		
Marine pollutant: No		

IATA

UN-Number: 1089 Class: 3	Packing group: I
Proper shipping name: Acetadehyde	
IATA Passenger: Not permitted for transport	

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. OTHER INFORMATION

Text of H-code(s) and R-phrases(s) mentioned in Section 3

Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H224	Extremely flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
STOT SE	Specific target organ toxicity - single exposure
F+	Extremely flammable
Xn	Harmful
R12	Extremely flammable.
R36/37	Irritating to eyes and respiratory system.
R40	Limited evidence of a carcinogenic effect.

Further information

For R&D use only. Not for drug, household or other uses.

WARRANTY:

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. Lookchem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.