

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

1 Identification of substance:**Product details:****Product name:** Acetaldehyde**Stock number:** 33244**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Acetaldehyde (CAS# 75-07-0), 100%

Identification number(s):**EINECS Number:** 200-836-8**EU Number:** 605-003-00-6**3 Hazards identification****Hazard description:**

Xn Harmful

F+ Extremely flammable

Information pertaining to particular dangers for man and environment

R 12 Extremely flammable.

R 36/37 Irritating to eyes and respiratory system.

R 40 Limited evidence of a carcinogenic effect.

Classification system**NFPA Ratings (scale 0-4)**

Health = 1

Fire = 4

Reactivity = 0

HMIS ratings (scale 0-4)**(Hazardous Materials Identification System)**

HEALTH	2
FIRE	4
REACTIVITY	1

Health (acute effects) = 2

Flammability = 4

Reactivity = 1

USA

(Contd. on page 2)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

Product name: Acetaldehyde

(Contd. of page 1)

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

For safety reasons unsuitable extinguishing agents

Halogenated extinguisher

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide (CO)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Keep away from heat and direct sunlight.

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

Product name: Acetaldehyde

(Contd. of page 2)

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Information about storage in one common storage facility:

Do not store together with oxidizing and acidic materials.

Do not store together with alkalies (caustic solutions).

Store away from halogens.

Store away from air.

Further information about storage conditions:

Avoid contact with air/oxygen (formation of peroxide).

Store under dry inert gas.

Refrigerate

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Acetaldehyde

	ppm
ACGIH TLV	25-Ceiling; A3
Belgium TWA	100; 150-STEL
Denmark TWA	25
Finland TWA	50; 75-STEL
France TWA	100
Germany TWA	50
Hungary TWA	25-STEL (carcinogen)
Ireland TWA	25; 500-STEL
Netherlands TWA	100
Poland TWA	5
Russia TWA	5
Sweden TWA	25; 50-STEL
Switzerland TWA	50; 100-STEL
USA PEL	200

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

Product name: Acetaldehyde

(Contd. of page 3)

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Colorless
Odor:	Pungent

Change in condition

Melting point/Melting range:	-125°C (-193°F)
Boiling point/Boiling range:	20.8°C (69°F)
Sublimation temperature / start:	Not determined

Flash point:	-40°C (-40°F)
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Ignition temperature:	174°C (345°F)
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Decomposition temperature:	Not determined
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Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
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Explosion limits:

Lower:	4.0 Vol %
Upper:	60.0 Vol %

Vapor pressure at 20°C (68°F):	975 hPa (731 mm Hg)
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Density at 20°C (68°F):	0.780 g/cm ³
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Solubility in / Miscibility with Water:	Fully miscible
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10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Acids
Bases
Oxidizing agents
Alcohols
Amines
Sulfides
Air

Dangerous reactions

Danger of polymerization
May form explosive peroxides.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

USA

(Contd. on page 5)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

Product name: Acetaldehyde

(Contd. of page 4)

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	900 mg/kg (mus)
		661 mg/kg (rat)
Dermal	LD50	3540 mg/kg (rbt)
Inhalative	LC50/4H	23000 mg/m ³ /4H (mus)
		13300 ppm/4H (rat)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Acetaldehyde is irritating and causes narcosis and other CNS effects. It is also an experimental teratogen and tumorigen.

May cause photosensitivity. Exposure to light can result in allergic skin reactions such as edematous swelling and dermatitis. May cause discoloration of the skin.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

(Contd. on page 6)

Material Safety Data Sheet

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Product name: Acetaldehyde

(Contd. of page 5)

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:**

Hazard class: 3
Identification number: UN1089
Packing group: I
Hazardous substance: 1000 lbs, 454 kg
Proper shipping name (technical name): ACETALDEHYDE
Label: 3

Land transport ADR/RID (cross-border)

ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 33
UN-Number: 1089
Packaging group: I
Description of goods: 1089 ACETALDEHYDE

Maritime transport IMDG:

IMDG Class: 3
UN Number: 1089
Label: 3
Packaging group: I
Proper shipping name: ACETALDEHYDE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
UN/ID Number: 1089
Label: 3
Packaging group: I
Proper shipping name: ACETALDEHYDE

- USA -

(Contd. on page 7)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/18/2007

Product name: Acetaldehyde

(Contd. of page 6)

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful

F+ Extremely flammable

Risk phrases:

12 Extremely flammable.

36/37 Irritating to eyes and respiratory system.

40 Limited evidence of a carcinogenic effect.

Safety phrases:

16 Keep away from sources of ignition - No smoking.

33 Take precautionary measures against static discharges.

36/37 Wear suitable protective clothing and gloves.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders