



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT CODE N0003
PRODUCT NAME NAT. ACETALDEHYDE
SUPPLIER Shanghai M & U International Trade Co., Ltd.
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FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Emergency Overview

OSHA Hazards -

Flammable liquid, Carcinogen, Target Organ Effect, Harmful by ingestion, Skin sensitizer, Irritant

Target Organs

Blood, Kidney, Lungs, Cardiovascular system, Liver, Central nervous system

Other hazards which do not result in classification

May form explosive peroxides. Lachrymator. Photo sensitizer.

GHS Classification

Flammable liquids (Category 1)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 5)

Acute toxicity, Dermal (Category 5)

Skin irritation (Category 3)

Eye irritation (Category 2A)

Skin sensitization (Category 1)

Carcinogenicity (Category 2)

Specific target organ toxicity - single exposure (Category 3)

Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Signal word Danger

Hazard statement(s)

H224 Extremely flammable liquid and vapor.

H302 Harmful if swallowed.

H313 H333 May be harmful in contact with skin or if inhaled.

H316 Causes mild skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P280 Wear protective gloves.
P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other hazards

Lachrymator.

HMIS Classification

Health hazard 2
Flammability 3
Physical hazards 2

NFPA Rating

Health hazard 2
Fire 3
Reactivity Hazard 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Ingestion Harmful if swallowed.

3. COMPOSITION AND INFORMATION ON INGREDIENTS:

SYNONYM Ethanal
Formula C_2H_4O
Molecular Weight 44.05 g/mol

CAS-No	EC-No	Index No.
75-07-0	200-836-8	605-003-00-6

4. FIRST-AID GUIDE:

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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 GUIDE:

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions-Carbon oxides.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE GUIDE:

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors 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 an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE:

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition- No smoking. Take measures to prevent the buildup 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: 2 - 8 °C

Air sensitive. Store under inert gas.

8. EXPOSURE AND PERSONAL PROTECTION:

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (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. 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.

Eye protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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	Liquid
Color	colorless to pale yellow

Safety data

pH	no data available
Melting point (°C)	-125
Boiling point (°C)	21
Flash point (°F) Closed cup	-40
Ignition temperature	175 °C (347 °F)
Autoignitiontemperature	no data available
Lower explosion limit	4 %(V)
Upper explosion limit	60 %(V)
Vapor pressure (mm Hg @20 °C)	756.4
Density @25 °C	0.785
Water solubility	MISCIBLE
Partition coefficient: n-octanol/water	log Pow: 0.5
Relative vapor density	1.52
Odor	PUNGENT, PENETRATING, FRUITY
Odor Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY:

Chemical stability

Avoid exposure to air any longer than necessary so as to prevent peroxide formation. Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapors may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Oxidizing agents, Reducing agents, acids, Nitric acid, Peroxides, Bases, Sodium Hydroxide, Amines, Ammonia, Oxygen, Warning: acetaldehyde is oxidized rapidly and exothermically by air, to acetic acid, Acid anhydrides, Alcohols, Halogens, Ketones, Phenol, Hydrogen sulfide gas, Hydrogen peroxide

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION:**Acute toxicity****Oral LD50**

LD50 Oral - rat - 661 mg/kg

Remarks: Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change.

Behavioral: Altered sleeptime (including change in righting reflex). Lungs, Thorax, or

Respiration: Dyspnea.

Inhalation LC50

LC50 Inhalation - rat - 4 h - 13300 ppm

Remarks: Behavioral: Excitement. Lungs, Thorax, or Respiration: Dyspnea.

Dermal LD50

LD50 Dermal - rabbit - 3,540 mg/kg

Other information on acute toxicity

no data available

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization

May cause allergic skin reaction.

Photo sensitizer.

Germ cell mutagenicity

Laboratory experiments have shown mutagenic effects.

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:

2B - Group 2B: Possibly carcinogenic to humans (Acetaldehyde)

NTP:

Reasonably anticipated to be a human carcinogen (Acetaldehyde)

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause respiratory irritation

Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion Harmful if swallowed.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure

Blurred vision, Unconsciousness, Headache, Vomiting, Nausea, Pulmonary edema. Effects may be delayed., Convulsions, sneezing, Cough, Shortness of breath

Additional Information

RTECS: AB1925000

12. ECOLOGICAL INFORMATION:

Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 31 mg/l - 96 h

LC100 - Leuciscus idus (Golden orfe) - 124 - 156 mg/l - 48 h

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

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. DISPOSAL RECOMMENDATIONS:

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORTATION INFORMATION:

DOT (US)

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

IMDG

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

IATA

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

15. REGULATORY INFORMATION:

OSHA Hazards

Flammable liquid, Carcinogen, Target Organ Effect, Harmful by ingestion., Skin sensitizer, Irritant

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Acetaldehyde	CAS-No.	Revision Date
	75-07-0	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Acetaldehyde	CAS-No.	Revision Date
	75-07-0	2007-07-01

Pennsylvania Right To Know Components

Acetaldehyde	CAS-No.	Revision Date
	75-07-0	2007-07-01

New Jersey Right To Know Components

Acetaldehyde	CAS-No.	Revision Date
	75-07-0	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

Acetaldehyde	CAS-No.	Revision Date
	75-07-0	2007-07-01

16. OTHER INFORMATION:

The information in this MSDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this

product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the MSDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the MSDS. The user should review these regulations to ensure full compliance.

Material Safety Data Sheet prepared by: **M & U International LLC**