

SAFETY DATA SHEET

Creation Date 22-Apr-2009

Revision Date 23-Jan-2018

Revision Number 3

1. Identification

Product Name Acetaldehyde

Cat No. : AC427170000; AC427171000; AC427178000

CAS-No 75-07-0
Synonyms Ethanal

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 1
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system, Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver, Blood.	

Label Elements

Signal Word

Danger

Hazard Statements

Extremely flammable liquid and vapor

Causes serious eye irritation

Suspected of causing cancer

May cause respiratory irritation

May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Response

IF exposed or concerned: Get medical attention/advice

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazardous polymerization may occur
Lachrymator (substance which increases the flow of tears)
May form explosive peroxides

WARNING. Cancer - <https://www.p65warnings.ca.gov/>.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Acetaldehyde	75-07-0	100

4. First-aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms and effects	Breathing difficulties. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	Water may be ineffective
Flash Point	-27 °C / -16.6 °F
Method -	No information available
Autoignition Temperature	140 °C / 284 °F
Explosion Limits	
Upper	60.0%
Lower	4.0%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Extremely flammable. May form explosive peroxides. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
2

Flammability
4

Instability
2

Physical hazards
N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.
Environmental Precautions	Avoid release to the environment. See Section 12 for additional ecological information.
Methods for Containment and Clean Up	Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling	Wear personal protective equipment. Use only under a chemical fume hood. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges. Contents may develop
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pressure upon prolonged storage. Reacts with air to form peroxides. If peroxide formation is suspected, do not open or move container. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat and sources of ignition. Refrigerator/flammables. Store under an inert atmosphere. Do not freeze.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Acetaldehyde	Ceiling: 25 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 180 mg/m ³ (Vacated) STEL: 150 ppm (Vacated) STEL: 270 mg/m ³ TWA: 200 ppm TWA: 360 mg/m ³	IDLH: 2000 ppm	Ceiling: 25 ppm Ceiling: 45 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	aromatic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-123 °C / -189.4 °F
Boiling Point/Range	21 °C / 69.8 °F
Flash Point	-27 °C / -16.6 °F
Evaporation Rate	49.1
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	60.0%
Lower	4.0%
Vapor Pressure	986 mbar @ 20°C

Vapor Density	1.52
Specific Gravity	0.785
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	140 °C / 284 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C ₂ H ₄ O
Molecular Weight	44.04

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Air sensitive. Hazardous polymerization may occur.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air.
Incompatible Materials	Strong oxidizing agents, Acids, Bases, Metals, Strong reducing agents, Alcohols, Amines, Halogens
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization may occur.
Hazardous Reactions	May form explosive peroxides.

11. Toxicological information

Acute Toxicity

Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetaldehyde	LD50 = 660 mg/kg (Rat)	Not listed	LC50 = 13000 ppm (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Irritating to eyes and respiratory system
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Acetaldehyde	75-07-0	Group 1 Group 2B	Reasonably Anticipated	A2	X	A3

IARC: (International Agency for Research on Cancer)

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Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

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Mexico - Occupational Exposure Limits - Carcinogens**Mexico - Occupational Exposure Limits - Carcinogens**

A1 - Confirmed Human Carcinogen
 A2 - Suspected Human Carcinogen
 A3 - Confirmed Animal Carcinogen
 A4 - Not Classifiable as a Human Carcinogen
 A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	Respiratory system Central nervous system (CNS)
STOT - repeated exposure	Kidney Liver Blood
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetaldehyde	EC50: 237 - 249 mg/L, 120h (Nitzschia linearis)	LC50: 28.0 - 34.0 mg/L, 96h flow-through (Pimephales promelas) LC50: 39.8 - 46.8 mg/L, 96h static (Pimephales promelas) LC50: 1.8 - 2.4 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 53 mg/L, 96h static (Lepomis macrochirus)	EC50 = 280.6 mg/L 15 min EC50 = 280.6 mg/L 25 min EC50 = 280.6 mg/L 5 min	EC50: = 48.3 mg/L, 48h (Daphnia magna) EC50: 3.64 - 6.15 mg/L, 48h Static (Daphnia magna)

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Acetaldehyde	0.5

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Acetaldehyde - 75-07-0	U001	-

14. Transport information

DOT

UN-No UN1089
 Proper Shipping Name ACETALDEHYDE
 Hazard Class 3
 Packing Group I

TDG

UN-No UN1089
 Proper Shipping Name ACETALDEHYDE
 Hazard Class 3
 Packing Group I

IATA

UN-No UN1089
 Proper Shipping Name Acetaldehyde
 Hazard Class 3
 Packing Group I

IMDG/IMO

UN-No UN1089
 Proper Shipping Name Acetaldehyde
 Hazard Class 3
 Packing Group I

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Acetaldehyde	X	X	-	200-836-8	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations**TSCA 12(b)**

Component	TSCA 12(b)
Acetaldehyde	Section 4

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Acetaldehyde	75-07-0	100	0.1

SARA 311/312 Hazard Categories See section 2 for more information**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Acetaldehyde	X	1000 lb	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Acetaldehyde	X		-

OSHA Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Acetaldehyde	-	TQ: 2500 lb

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Acetaldehyde	1000 lb	-

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Acetaldehyde	75-07-0	Carcinogen	90 µg/day	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Acetaldehyde	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Acetaldehyde	7500 lb STQ

Other International Regulations

Mexico - Grade Severe risk, Grade 4

16. Other information

Prepared By Regulatory Affairs
 Acros Organics BVBA
 Tel: 800-ACROS-01

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Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS