

SAFETY DATA SHEET

Creation Date 22-April-2009

Revision Date 12-November-2020

Revision Number 6

1. Identification

Product Name Acetaldehyde

Cat No. : AC427170000; AC427171000; AC427178000

CAS-No 75-07-0
Synonyms Ethanal

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.
Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Manufacturer

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

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

WHMIS 2015 Classification

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable liquids	Category 1
Acute oral toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system, Central nervous system (CNS).	
Physical Hazards Not Otherwise Classified	Category 1
May form explosive peroxides	
Hazardous polymerization may occur	
Health Hazards Not Otherwise Classified	Category 1
Lachrymator	

Label Elements

Signal Word

Danger

Hazard Statements

Extremely flammable liquid and vapor
 Harmful if swallowed
 Causes serious eye irritation
 May cause respiratory irritation
 Suspected of causing genetic defects
 May cause cancer
 May form explosive peroxides
 Hazardous polymerization may occur
 Lachrymator

**Precautionary Statements****Prevention**

Keep container tightly closed
 Keep cool. Protect from sunlight
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharges
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Wear protective gloves/protective clothing/eye protection/face protection

Response

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 IF exposed or concerned: Get medical advice/attention
 Rinse mouth
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

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

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
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Acetaldehyde	75-07-0	<=100
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4. First-aid measures

General Advice	If symptoms persist, call a physician.
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. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms/effects	None reasonably foreseeable. 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. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	Water may be ineffective
Flash Point	-27 °C / -16.6 °F
Method -	No information available
Autoignition Temperature	155 °C / 311 °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	Flammability	Instability	Physical hazards
2	4	2	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment as required. Ensure adequate ventilation. Remove all
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Environmental Precautions sources of ignition. Take precautionary measures against static discharges. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

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

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetaldehyde	Ceiling: 25 ppm Ceiling: 45 mg/m ³	Ceiling: 25 ppm	CEV: 25 ppm	Ceiling: 25 ppm Ceiling: 45 mg/m ³	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

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and 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. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Butyl rubber	> 240 minutes	0.7 mm	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	pungent
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	155 °C / 311 °F
Decomposition Temperature	No information available
Viscosity	0.25 mPas @ 15°C
Molecular Formula	C2 H4 O
Molecular Weight	44.04

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Stable under recommended storage conditions. Polymerization can occur. May form explosive peroxides.
Conditions to Avoid	Excess heat. Exposure to air. Keep away from open flames, hot surfaces and sources of ignition.
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 Reacts with air to form peroxides.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetaldehyde	LD50 = 660 mg/kg (Rat)	LD50 = 3540 mg/kg (Rabbit)	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)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

IARC (International Agency for Research on Cancer)

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)

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 Mutagenic effects have occurred in experimental animals.

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 None known

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

The product contains following substances which are hazardous for the environment. Contains a substance which is: Toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetaldehyde	Not listed	LC50: 28.0 - 34.0 mg/L, 96h flow-through (Pimephales promelas) LC50: 1.8 - 2.4 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 53 mg/L, 96h static (Lepomis macrochirus) LC50: 39.8 - 46.8 mg/L, 96h static (Pimephales promelas)	EC50 = 280.6 mg/L 15 min EC50 = 280.6 mg/L 25 min EC50 = 280.6 mg/L 5 min	EC50: 3.64 - 6.15 mg/L, 48h Static (Daphnia magna) EC50: = 48.3 mg/L, 48h (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

All of the components in the product are on the following Inventory lists: China X = listed Australia U.S.A. (TSCA) Canada

(DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) Korea (ECL) China (IECSC) Japan (ENCS) Philippines (PICCS)

International Inventories

Component	DSL	NDSL	TSCA	EINECS	ELINCS	PICCS	ENCS	AICS	KECL	IECSC
Acetaldehyde	X	-	X	200-836-8	-	X	X	X	KE-00003	X

Legend**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Acetaldehyde	Part 1, Group A Substance Part 4 Substance	Schedule I	

Legend

NPRI - National Pollutant Release Inventory

16. Other information

Prepared By

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

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22-April-2009

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12-November-2020

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12-November-2020

Revision Summary

This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

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