



Acetaldehyde Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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Acetaldehyde

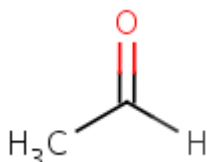
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1 Product identifier

PRODUCT NAME : Acetaldehyde
 CAS RN : 75-07-0
 EC# : 200-836-8
 SYNONYMS : Acetic aldehyde; Ethanal; Ethyl aldehyde
 SYSTEMATIC NAME : Ethanal
 MOLECULAR FORMULA : C₂H₄O
 STRUCTURAL FORMULA:



1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses

- It is used as chemical intermediate for Pyridine & Pyridine Bases, pentaerythritol & 1,3-butylene glycol, chloral & glyoxal, it is also used as monomer for polyacetaldehyde & comonomer for copolymers, alcohol denaturant, oxidn promoter in mfr of terephthalic acid, Used in the manufacture of disinfectants, drugs, dyes, explosives, flavorings, lacquers, mirrors (silvering), perfume, photographic chemicals, phenolic and urea resins, rubber accelerators and antioxidants, varnishes, vinegar, and yeast etc.

Uses advised against: None

1.3 Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

FACTORY & REGISTERED OFFICE: Jubilant Ingrevia Limited, Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India.
 T +91-5924-267437 & +91-5924-267438

HEAD OFFICE: Jubilant Ingrevia Limited, Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 - India
 T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96 support@jubl.com - www.jubilantingrevia.com

1.4 Emergency telephone number

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) Call
 Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)
 Chemtrec (India) : 000-800-100-7141

For ALL other emergencies call Emergency Control Room Gajraula at 99970 22412

2.0 SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture

GHS-US classification

Flammable liquids: Category 1
 Eye irritation: Category 2
 Specific target organ toxicity (Single exposure): Category 3
 Germ cell mutagenicity: Category 2
 Carcinogenicity: Category 1B
 Acute toxicity Oral: Category 4

H224: Extremely flammable liquid and vapour.
 H319: Causes serious eye irritation.
 H335: May cause respiratory irritation.
 H341: Suspected of causing genetic defects
 H350: May cause cancer
 H302: Harmful if swallowed-

2.2 Label Elements

GHS-US classification

Hazard Pictogram: GHS 02, GHS 07, GHS 08.



GHS 02



GHS 07



GHS 08

Signal Word: Danger!

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS



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- H224: Extremely flammable liquid and vapour.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
- H341: Suspected of causing genetic defects
- H350: May cause cancer
- H302: Harmful if swallowed

PRECAUTIONARY STATEMENTS

- P210: Keep away from heat/sparks/open flames/hot surfaces.No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/lighting equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P264: Wash hands thoroughly after handling.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P270: Do not eat, drink or smoke when using this product.
- P303+P361+P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water / shower.
- P370 + P378: In case of fire: Use water for extinction.
- P305 + P351+ P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P337 + P313: If eye irritation persists: Get medical advice/attention.
- P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P308 + P313: IF exposed: Call a POISON CENTER or doctor/physician.
- P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth
- P403 + P235: Store in a well-ventilated place. Keep cool.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations.

2.3 Other hazards

- No additional information available.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical	CAS #	EC#	Purity
Acetaldehyde	75-07-0	200-836-8	NLT 99.00%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

- **General Information:** Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.
- **Inhalation:** Keep at rest. Move to fresh air. Call a physician immediately.
- **Skin:** Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
- **Eyes:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- **Ingestion:** Rinse with plenty of water. If swallowed give 1-2 glasses of water to drink immediately. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

- **Main symptoms:** Vapours may cause irritation to the eyes, respiratory system and the skin.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically. In case of lung irritation first treatment with dexametason aerosol (spray). In the case of absorption of large volumes, use gastroscopy with suction cleaning.

SECTION 5: FIRE-FIGHTING MEASURES



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5.1 Extinguishing media

- **Appropriate extinguishing media:** Foam, Dry chemical, Carbon dioxide (CO₂), Water spray
- **Extinguishing media which must not be used for safety reasons:** Do not use water jet, to avoid propagation of a fire.

5.2 Special Hazard arising from substance or mixture

- Under conditions giving incomplete combustion, hazardous gases produced may consist of Carbon monoxide, Carbon dioxide (CO₂) and Combustion gases of organic materials

5.3 Advice for fire fighters

- **Special protective equipment for fire-fighters**
Self-contained breathing apparatus (EN 133).
- **Environmental precautions**
Dike and collect water used to fight fire.
- **Other Information**
Cool containers / tanks with water spray

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- **Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.**

Environmental precautions

- Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.

Methods and material for containment and cleaning up

- Soak up with inert absorbent material. Do not use rags, paper towels or combustible materials to clean up a spill, because spontaneous combustion can occur. Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

Reference to other sections

- Consult trained personnel. Consider the information for "Personal Protection" in chapter 8 of this Safety Data Sheet.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

- **Hygiene measures**
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately Wash hands before breaks and immediately after handling the product.
- **Advice on safe handling**
Vapors may form explosive mixtures with air. The pressure in sealed containers can increase under the influence of heat. Refill and handle product only in closed system. Provide sufficient air exchange and/or exhaust in work rooms.
- **Incompatible products**
Keep away from: Acids, Bases, amines, oxygen, Oxidizing agents, Reducing agents
- **Protection - fire and explosion:**
Keep away from sources of ignition - No smoking. Vapours are heavier than air and may spread along floors.
Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.
- **Reduce the release of the substance or mixture to the environment**
See Section 8: Environmental exposure controls

7.2 Conditions for safe storage, including any incompatibilities

- **Material storage**
Store locked up. The product will oxidize in air and release heat. Oxidization creates acids and peroxides, that may lead to corrosive damages in storage and handling equipment.
- **Incompatible products**
Keep away from: Acids, Bases, amines, oxygen, Oxidizing agents, Reducing agents.
- **Technical measures/Storage conditions**
Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care. Store under nitrogen.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Limit Values:

No exposure limits established



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Exposure Limits International:

	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Australia	20	36	50	91
Austria	50	90	50	90
Belgium	25	46		
Canada - Ontario			25 (1)	
Canada - Québec			25 (1)	45 (1)
Denmark	25	45	25	45
Finland			25 (1)	46 (1)
France	100	180		
Germany (AGS)	50	91	50 (1)	91(1)
			100 (2)	182 (2)
Germany (DFG)	50	91	50 (1)(2)	91 (1)(2)
Hungary		25		25
Ireland	25	45	25 (1)	45 (1)
Japan - JSOH	50 (1)	90 (1)		
Latvia		5		
New Zealand	20		50	
People's Republic of China				45 (1)
Poland		5		45 (1)
Romania	50	90	100 (1)	180 (1)
Singapore			25	45
South Korea	50	90	150	270
Spain			25	46
Sweden	25	45	50 (1)	90 (1)
Switzerland	50	90	50	90
The Netherlands		37		92
USA - NIOSH	18 (LOQ)			
USA - OSHA	200	360		
United Kingdom	20	37	50	92

	Remarks
Canada - Ontario	(1) Ceiling limit value
Canada - Québec	(1) Ceiling limit value
Finland	(1) 15 minutes average value
Germany (AGS)	(1) 15 minutes average value (2) Ceiling limit value
Germany (DFG)	(1) 15 minutes average value (2) A momentary value of 100 ml/m ³ (180mg/m ³) should not be exceeded.
Ireland	(1) 15 minutes reference period
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day
People's Republic of China	(1) Ceiling limit value
Poland	(1) Ceiling limit value
Romania	(1) 15 minutes average value
Sweden	(1) 15 minutes average value
USA - NIOSH	LOQ limit of quantitation

Exposure controls

Appropriate Engineering Controls:

- General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal Protection

- General advice** Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

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- **Hygiene measures** When using, do not eat, drink or smoke. Take off all contaminated clothing immediately Wash hands before breaks and immediately after handling the product.
- **Respiratory protection** respirator with AX filter. Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.
- **Eye protection** Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face. Equipment should conform to EN 166
- **Skin protection** impervious clothing
- **Hand protection** Chemicals resistant gloves
Suitable material Butyl-rubber
Reference substance Vinyl acetate
Type Butoject (Company KCL) or comparable article; or refer to glove manufacturer's recommendation
Evaluation according to EN 374: level 5
Material thickness Approx. 0.7 mm
Break through time approx. 240 min
- **Environmental exposure controls**
Do not discharge into the drains/surface waters/groundwater
- **Environmental Precautions**
Should not be released into the environment

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- **Information on basic physical and chemical properties.**

Sr.No.	Parameter	Typical value
1.	Appearance	Clear colorless liquid
2.	Odor	Pungent, fruity odor
3.	Odor Threshold	0.21 mg/l (gas in air)
4.	Melting point	-123 deg C
5.	Boiling point	20.1 deg C @ 1013 hPa
6.	Flash point	-39 °C
7.	Evaporation rate (n-BuAc=1)	No data available
8.	Explosive limits	Lower explosion limit 4 %(V) Upper explosion limit 60 %(V)
9.	Vapor pressure	1203 hPa @ 25°C 2794 hPa @ 50°C
10.	Vapor density (air=1)	1.52 (Air = 1)
11.	Relative density	0.783
12.	Solubility	Miscible with water, ethanol, ether, benzene; slightly soluble in chloroform.
13.	Refractive Index	Not available
14.	Log Kow (octanol/water)	-0.45
15.	Ignition temperature	155 °C
16.	Decomposition temperature	420 °C
17.	Viscosity	0.25 mPa*s @ 15°C
18.	Surface Tension	20.50 mN/m @ 25°C
19.	Molecular Weight	44.05
20.	Flammable Material	Yes
21.	Corrosive material	not applicable based on consideration of the structure
22.	Explosive material	not applicable based on consideration of the structure

Other information.

- No additional information available.

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** Stable if protected from heat and exposure to air...
- **Stability:** No decomposition if used as directed.
- **Conditions to avoid:** Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge
- **Incompatible chemicals:** Keep away from: oxygen, Oxidizing agents, Reducing agents, Acids, Bases
- **Possibility of Hazardous reactions:** May form explosive peroxides. Polymerization can occur. Polymerization is a highly exothermic reaction and



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may generate sufficient heat to cause thermal decomposition and/or rupture containers.

- **Hazardous decomposition products:** No hazardous decomposition products are known

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

(a) Acute Toxicity:

- **RTECS # : AB1925000**

No.	Parameter	Data	Reference
1	Acute Oral Toxicity	Oral LD50 Rat 1930 mg/kg	RTECS
2	Acute Skin Toxicity	LD50 - Rodent – rabbit 3540 mg/kg	RTECS
3	Acute Inhalation	Inhalation LC50 Rat 13300 ppm 4 h 17000 ppm/4 hour Inhalation Hamster LC50; 20300 mg/m ³ /2 hour Inhalation Mouse LC50; 23 gm/m ³ /4 hour Inhalation Mouse LC50 13300 ppm/4 hour Inhalation Rat LC50; 13300 ppm/4 hour Inhalation Rat LC50; 25000 mg/m ³ Inhalation Rat LC50	RTECS

(b) Skin Corrosion/Irritation;

- Slight irritant effect - does not require labelling.
- Species Rabbit, Method OECD 404

(c) Serious Eye Damage/Irritation;

- Irritant.
- Species Humans

(d) Respiratory Or Skin Sensitization;

- Non sensitizer
- Species guinea pig, female
- Method OECD 406

(e) Genetic Mutagenicity;

- Ames Test: negative - with and without metabolic activation - Method: OECD 471
- Cytotoxicity and micronucleus assay in human lymphoblastoid cells (TK6): positive - Method: OECD 487.
- *“Substances which are known to induce heritable mutations or are to be regarded as if they induce heritable mutations in the germ cells of humans may be classified in category 1. As no data are available from human epidemiological studies, or from in vivo heritable germ cell mutagenicity tests in mammals, classification in category 1A would be inappropriate.” and “Although it may be possible to identify a threshold for this mutagenic activity, as raised during the public consultation, a case cannot be made for no classification in accordance with the CLP criteria.”*
- Acetaldehyde is currently classified as having mutagenic activity (Muta. 2: harmonized classification - Annex VI of regulation (EC) 1272/2008). This classification is regarded as appropriate based on the argumentation outlined in the Discussion

(f) Carcinogenicity;

- May cause cancer. It is potential occupational carcinogen.
- Species Rat

(g) Developmental Effects:

- No teratogenic, maternal or developmental effects
- Routes of exposure: oral gavage
- Species: Rat
- Method: OECD 414, NOAEL: > 400 mg/kg bw/day
- Type of study: Prenatal Developmental Toxicity Study

(h) Repeated exposure

- Caused slight hyperkeratosis in the forestomach
- Routes of exposure: Oral gavage
- Species: Rat
- Method: OECD 407, NOAEL: 125 mg/kg bw/day
- Type of study: 28-day repeated administration toxicity test

(i) Repeated exposure.

- Damage of the epithelium of the respiratory tract
- Routes of exposure: Inhalation
- Species: Rat

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- Method: NOAEL: 270 mg/m³
- Type of study: 28-day repeated administration toxicity test

SECTION 12: ECOLOGICAL INFORMATION

Eco toxicity

- **Acute fish toxicity** LC50: 124 mg/l (48h)
Species: Leuciscus idus (Golden orfe)
Method DIN 38412 T.15
- **Chronic fish toxicity** LC50 (14d): 35 mg/l
Species: Poecilia reticulata (guppy)
Method OECD 204
- **Acute daphnia toxicity** EC50: 57.4 mg/l (48h)
Species: Daphnia magna
Method OECD 202
- **Toxicity to aquatic plants** EC50: > 100 mg/l (72h)
Species: Pseudokirchneriella subcapitata
Method OECD 201
- **Toxicity to bacteria** NOEC: 82 mg/l
Species: Chilomonas paramecium
- **Biodegradation** Readily biodegradable
Method OECD 301 C


SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

- **Product information:** Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.
- **Uncleaned empty packaging:** Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: TRANSPORT INFORMATION

This substance is considered to be Hazardous for transport by Air/Rail/Road and Sea and thus it is regulated by IATA/ICAO/IMO/IMDG/ US DOT.

S. No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land Transport	DOT	UN 1089	Acetaldehyde	3	I
Maritime Transport	IMDG	UN 1089	ACETALDEHYDE	3	I
Air Transport	IATA	UN 1089	Acetaldehyde	3	I
Hazard Label		Extremely Flammable			

Environmental hazards

- Marine pollutant: No.

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union Information

Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Flammable Liq. Cat.1; Carc.Cat.2, Eye irrit Cat 2A;STOT SE Cat 3, Acute toxicity Oral: Category 4



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- **Hazard Statements:** H224; H351; H319; H335, H302

Chemical Inventory Lists	Status
TSCA:	Present
EINECS:	200-836-8
Canada(DSL/NDSL):	Listed/DSL
Japan:	2-485
Korea:	KE=00003
Australia:	Not available
China: IECSC	Present

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation : January 06, 2014
Chemical : Acetaldehyde
CAS # : 75-07-0
File Name : 0892Gj Ghs06 Div.2 sds Acetaldehyde
Revision Number : 06
Date of revision of SDS : April 04, 2024
Revision Due Date : March, 2027
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b) A key or legend to aberrations and acronyms used in the safety data sheet

- PBT =Persistent Bio accumulative and Toxic.
- vPvB= Very Persistent and Very Bio accumulative.
- SCBA= Self Contained Breathing Apparatus.
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit.
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Program.
- IARC= International Agency for Research on Cancer.
- EPA=Environmental Protection Agency.
- TSCA= Toxic Substances Control Act.
- SARA= Superfund Amendments and Reauthorization Act.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- BCF = Bio Concentration Factor.
- TLV = Threshold Limit Value.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation .Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonized System.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- ICAO = International Civil Aviation Organization.
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation.

c) Key Literature reference and sources for data

Biographical reference and data sources

- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009.
- Globally Harmonized System of Classification and Labelling of Chemicals.
- RTECS

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental Requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

(End of Safety Data Sheet)