

MATERIAL SAFETY DATA SHEET

MSDS DATE: 27/06/06

FILE NO.: ALX-280-016

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Acrolein
SYNONYMS: Acraldehyde; Acrylic aldehyde; Allyl aldehyde; Ethylene aldehyde; 2-Propenal
PRODUCT CODES: ALX-280-016

MANUFACTURER: ALEXIS Corporation
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CH-4415 Lausen
Switzerland

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Formula:</u>	<u>CAS #</u>	<u>EC #</u>	<u>Annex I Index #</u>
C ₃ H ₄ O	107-02-8	N/A	N/A

SECTION 3: HAZARDS IDENTIFICATION

ACUTE HEALTH EFFECTS: **FLAMMABLE. VERY TOXIC. May be fatal by inhalation, ingestion, or skin absorption.**

SECTION 4: FIRST AID MEASURES

EYES: Rinse immediately with plenty of water for 15 minutes. Check for and remove any contact lenses. Seek medical attention if symptoms appear.

SKIN: Wash immediately with water for 15 minutes. Remove contaminated clothing. Seek medical attention if symptoms appear.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek medical attention if symptoms appear. Provide MSDS and label information if possible.

INHALATION: Take into fresh air. If breathing is difficult, administer oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water spray, water foam, polymer foam, carbon dioxide, dry chemicals.

SPECIAL FIRE FIGHTING PROCEDURES: In case of fire, watch out for the formation of toxic smoke and gases. Wear self-contained respiration equipment. Prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors can flow along surfaces to distant ignition source and flash back. Vapor may polymerize explosively at elevated temperatures. Closed containers exposed to heat may explode.

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Evacuate area. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.

ACCIDENTAL RELEASE MEASURES: Avoid formation of dust, sweep up spill and place in sealed container and hold for disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Keep locked up. Keep away from heat, sources of ignition and incompatibles such as oxidizing agents. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Avoid contact with skin and eyes; do not breathe dust. Avoid prolonged or repeated exposure. Immediately remove all contaminated clothing. Wash hands before breaks and after work. Avoid eating, drinking and storage of food in the work room. Store tightly sealed at +4°C.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use only in chemical fume hood. Safety shower and eye bath.
VENTILATION: Government approved respirator.
EYE PROTECTION: Chemical safety goggles.
SKIN PROTECTION: Compatible gloves, protective coat or clothing.
SECTION 8 NOTES: Wash thoroughly after handling. Wash contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear to yellow liquid.
ODOR: Irritating/stinging odor.
pH AS SUPPLIED: N/A
BOILING POINT: N/A
MELTING POINT: N/A
FREEZING POINT: N/A
VAPOR PRESSURE (mmHg): N/A
VAPOR DENSITY (AIR = 1): N/A
SPECIFIC GRAVITY (H₂O = 1): N/A
EVAPORATION RATE: N/A
BASIS (=1): N/A
SOLUBILITY: N/A
MOLECULAR WEIGHT: 56.1

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Unstable. Very reactive with acids, amines, alkalis, sulfur dioxide, metal salts, oxidants, thiourea, dimethylamine, or weak acid conditions such as nitrogen or carbon oxide gases. Reactions may be very rapid and violent.
HAZARDOUS DECOMPOSITION: Carbon monoxide, peroxides.
HAZARDOUS POLYMERIZATION: Polymerizes. May polymerize violently on contact with strong acids or bases. Forms explosive polymers upon standing.

SECTION 11: TOXICOLOGICAL INFORMATION

RTECS # : AS1050000
TOXICOLOGICAL INFORMATION: FLAMMABLE. VERY TOXIC. Highly irritating. May injure the lungs and bronchial airways. Symptoms include severe irritation of the mucous membranes, burning of the throat, cough, difficulty breathing, tightness in the chest, nausea, vomiting and diarrhea, pulmonary edema, high blood pressure, and unconsciousness. A weak sensitizer; may cause asthmatic reaction. Inhalation of high concentrations can cause permanent lung damage. Target organs are eyes, skin, respiratory system, heart. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
LD50: Oral (rat): 26 mg/kg
Inhalation (rat): 18 mg/m³ 4 H
Skin (rabbit): 200 mg/kg
CHRONIC EXPOSURE: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
CHRONIC EXPOSURE-CARCINOGEN: EPA/IRIS classification: Group C - Possible human carcinogen.
CHRONIC EXPOSURE-MUTAGEN: Not available.
CHRONIC EXPOSURE-TERATOGEN: Not available.

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SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

INTERNATIONAL TRANSPORT REGULATIONS:

LAND – ROAD/RAILWAY: ADR/RID: Not available.
SEA: IMDG: Not available.
AIR: IATA-DGR: Not available.
SPECIAL PROVISIONS FOR TRANSPORT: N/A

SECTION 15: REGULATORY INFORMATION

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES:

SYMBOL OF DANGER: T+, very toxic
F, flammable

R-PHRASES: R2 - Risk of explosion by shock, friction, fire or other sources of ignition.
R10 - Flammable.
R26/28 - Very toxic by inhalation and if swallowed.
R34 - Causes burns.
R41 - Risk of serious damage to eyes.

S-PHRASES: S7 - Keep container tightly closed.
S9 - Keep container in a well-ventilated place.
S15 - Keep away from heat.
S16 - Keep away from sources of ignition - No smoking.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately.

U.S. FEDERAL REGULATIONS: Not available.

HCS CLASSIFICATION: Not available.

WHMIS (CANADA): Not available.

SECTION 16: OTHER INFORMATION

DISCLAIMER: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Alexis Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

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