

Common Name: ACETALDEHYDE

Synonyms: Ethanal; Ethyl Aldehyde; Acetic Aldehyde

CAS No: 75-07-0

Molecular Formula: C₂H₄O

RTK Substance No: 0001

Description: Clear, colorless liquid, or a gas above 69°F (21°C), with a sharp, fruity odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<p>3 - Health</p> <p>4 - Fire</p> <p>2 - Reactivity</p> <p>DOT#: UN 1089</p> <p>ERG Guide #: 129</p> <p>Hazard Class: 3 (Flammable)</p>	<p>Acetaldehyde can spontaneously decompose or polymerize to form explosive <i>Peroxides</i> when heated, distilled, evaporated or contaminated.</p> <p>FLAMMABLE AND REACTIVE LIQUID</p> <p>Use dry chemical, CO₂, water spray or alcohol-resistant foam as extinguishing agents.</p> <p>Water and foam may not be effective in fighting fires.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE.</p> <p>CONTAINERS MAY EXPLODE IN FIRE.</p> <p>Use water spray to keep fire-exposed containers cool and to reduce vapors.</p> <p>Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source or flashback.</p> <p>Acetaldehyde may form an ignitable vapor/air mixture in closed tanks or containers.</p>	<p>Acetaldehyde is REACTIVE and can form explosive <i>Peroxides</i> on prolonged contact with AIR.</p> <p>Acetaldehyde reacts with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); AMMONIA; ALCOHOLS; ISOCYANATES; OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); KETONES; AMINES; and TRACE AMOUNTS of METALS resulting in violent or explosive polymerization (uncontrolled reactions).</p>

SPILL/LEAKS

Isolation Distance:
 Spill: 50 meters (150 feet)
 Fire: 800 meters (1/2 mile)

Absorb liquid with fly ash, cement powder or commercial sorbent and place into sealed containers for disposal.

Use only non-sparking tools and equipment, especially when opening and closing containers of **Acetaldehyde**.

Metal containers involving the transfer of **Acetaldehyde** should be grounded and bonded.

Neutralize water spills with *Sodium Bisulfite*.

Keep **Acetaldehyde** out of confined spaces, such as sewers, because of the possibility of an explosion.

DO NOT wash into sewer.

Acetaldehyde is harmful to aquatic life in very low concentrations.

PHYSICAL PROPERTIES

Odor Threshold: 0.067 to 0.21 ppm

Flash Point: -36°F (-38°C)

LEL: 4%

UEL: 60%

Auto Ignition Temp: 347°F (175°C)

Vapor Density: 1.52 (air = 1)

Vapor Pressure: 740 mm Hg at 68°F (20°C)

Specific Gravity: 0.8 (water = 1)

Water Solubility: Floats and Mixes

Boiling Point: 69°F (21°C)

Freezing Point: -190°F (-123°C)

Ionization Potential: 10.22 eV

Molecular Weight: 44.06

EXPOSURE LIMITS

OSHA: 200 ppm, 8-hr TWA

NIOSH: Lowest Feasible Concentration

ACGIH: 25 ppm, Ceiling

IDLH: 2,000 ppm

The Protective Action Criteria values are:
 PAC-1 = 45 ppm PAC-2 = 270 ppm PAC-3 = 840 ppm

PROTECTIVE EQUIPMENT

Gloves: Butyl, Viton/Butyl and Barrier® (>8-hr breakthrough)

Coveralls: Tychem® BR, Responder® and TK (8-hr breakthrough)

Respirator: >25 ppm - SCBA

HEALTH EFFECTS

Eyes: Irritation and severe burns

Skin: Irritation, rash and burning feeling on contact

Inhalation: Nose, throat and lung irritation, with coughing, and severe shortness of breath (pulmonary edema)

Headache, dizziness, lightheadedness, and passing out

Chronic: Cancer (nose and larynx) in animals

FIRST AID AND DECONTAMINATION

Flush eyes with large amounts of water for at least 30 minutes. Remove contact lenses if worn. Seek medical attention.

Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water.

Begin artificial respiration if breathing has stopped and CPR if necessary.

Transfer promptly to a medical facility.

Medical observation is recommended as symptoms may be delayed.