



Central Pollution Control Board

Ministry of Environment & Forests, Govt of India, Parivesh Bhawan, East Arjun Nagar, Delhi - 110032

MATERIAL SAFETY DATA SHEETS

10

Acrolein

1. CHEMICAL IDENTITY

Chemical Name : Acrolein

Chemical Classification: Toxic, Flammable **Trade Name :**

Synonyms: Acraldehyde, Acrylic aldehyde, Allyl aldehyde, 2-propenal, 2-Propen-1-one

Formula : C₃H₄O **CAS No:** 107-02-8 **UN No:** 1092

Regulated Identification

Shipping Name : Acrolein **Hazchem Code :** 2WE

Codes / Label : Class 6.1, Flammable Liquid **Hazardous Waste ID No :** 5

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 Acrolein	107-02-8	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: 52.7	Physical State: Liquid	Appearance: Colourless to yellow, watery.
Melting Pt °C: -87.8	Vapour Pressure @ 35°C mmHg: 210 mmHg at 20 °C	Odour: Pungent odour, a disagreeable choking odor.
Vapour Density(Air =1): 1.94	Solubility in water at 30°C g/100ml: 213 g/L	Others: Soluble in alcohol and ether
Specific Gravity (Water =1): 0.843 at 20 °C		pH :

3. FIRE / EXPLOSION HAZARD DATA

Flammability : Yes	LEL: 2.8	Flash Point °C in OC: <-18.0
TDG Flammability: 3	UEL: 31	Flash Point °C in CC: -26.0

Autoignition Temperature °C : 220 (unstable)

Explosion sensitivity to impact: Explosive

Explosion sensitivity to static Electricity: Explosive

Hazardous Combustion Products : Toxic gases and vapors (such as carbon monoxide and peroxides) may be released in a fire involving acrolein.

Hazardous Polymerization : Polymerizes (especially under light/alkali/strong acid) forming disacryl, a plastic solid. Avoid elevated temperatures. Polymerization inside container could cause violent rupture of container under fire conditions.

Combustible Liquid: Yes	Explosive Material: Yes	Corrosive Material No
Flammable Material: Yes	Oxidiser : No	Others:
Pyrophoric Material: No	Organic Peroxide : No	

4. REACTIVITY DATA

Chemical Stability : Unstable if it is not inhibited.

Incompatibility with other material : Amines, SO₂, metal salts, oxidants, (light+heat), halogen, HNO₃, NaH₂ oxidants.

Reactivity : Violent polymerisation reaction in contact with strong acids, strong base, weakacidic conditions, thiourea, dimethylamine.

Hazardous :

Reaction Products

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, ingestion, skin and eyes

Effects of Exposure / Symptoms:

Inhalation: May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause severe irritation and possible burns. May be harmful if absorbed through the skin.

Eyes: May result in corneal injury. Contact with eyes may cause severe irritation, and possible eye burns. Lachrymator.

Ingestion: May be fatal if swallowed. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns.

Emergency Treatment :

Inhalation: Remove the victim at once to fresh air area, if breathing becomes difficult give oxygen.

Skin: Wash the affected area in running water with soap.

Eyes: Irrigate thoroughly with plenty of water for 15min.

Ingestion: Induce vomiting. Provide plenty of water to drink.

LD50 (oral-rat) mg/kg:	46 mg/kg	STEL:	0.3 ppm 0.8 mg/m ³
LC50 (rat) mg/kg:	26 ppm/1 hr	Odour Threshold:	0.21 ppm
Permissible Exposure Limit:	0.1 ppm (0.25 mg/m ³)	TLV (ACGIH) :	0.1 ppm, skin

NFPA Hazard	Health	Flammability	Reactivity	Special
Signals	4	3	3	

6. PREVENTIVE MEASURES

Personal Protective Equipment : Provide face shield, self-contained breathing apparatus, air-line mask, rubber overclothes, hand gloves, boots

Handling : Keep in a dry, cool, well ventilated area, away from heat, flame, oxidising material. Material should be inhibited, otherwise polymerisation may take place in presence of light.

Storage : Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep under a nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light and air.

Precautions : Avoid contact with liquid and vapour

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media : Dry chemical powder, alcohol foam, CO₂, water may be ineffective. Do not use water jet.

Special Procedure : Keep the containers cool by spraying water if exposed to heat or flame

Unusual Hazards : Poisonous gases are produced in fire.

EXPOSURE: First Aid Measures:

Inhalation: Remove the victim at once to fresh air area, if breathing becomes difficult give oxygen.

Skin: Wash the affected area in running water with soap.

Eyes: Irrigate throughly with plenty of water for 15min.

Ingestion: Induce vomiting. Provide plenty of water to drink.

Antidotes / Dosages: Salt water

SPILLS :

Steps To Be Taken : Shut off leaks if without risk. Contain on sand or earth. Wash the surface with water and soap.

Waste Disposal Method: Seal all the waste in vapour tight plastic bags for eventual disposal.

8. ADDITIONAL INFORMATION / REFERENCES

Dangerous fire hazard when exposed to heat, flame or oxidiser. Light promotes (if not inhibited) polymerisation and thus containers may explode.

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM :

Contact person

MAILING ADDRESS :

in Emergency :

TELEPHONE / TELEX NOS :

Local Bodies involved :

TELEGRAPHIC ADDRESS :

Standard Packing :

OTHERS :

Trem Card Details / Ref :

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