



Central Pollution Control Board

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

MATERIAL SAFETY DATA SHEETS

346

Lewisite

1. CHEMICAL IDENTITY

Chemical Name : Lewisite

Chemical Classification: Toxic

Trade Name :

Synonyms: Lewisite 1, Arsine, Dichloro(2-chlorovinyl)-

Formula : C₂H₂AsCl

CAS No: 541-25-3

UN No: 2810

Regulated Identification

Shipping Name :

Hazchem Code : 2X

Codes / Label : Class 6.1, Toxic

Hazardous Waste ID No :

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 Lewisite	541-25-3	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: 76-77 (12.5 mm Hg)

Physical State: Liquid

Appearance: Colorless liquid when pure; impurities lead to colors ranging from violet to brown.

Melting Pt °C: 0.1

Vapour Pressure @ 35°C mmHg: 0.58 mm Hg @ 25 deg C

Odour: Faint odour of geranium.

Vapour Density(Air =1): 7.1

Solubility in water at 30°C g/100ml: Insoluble

Others: Solidifies @ -13 deg C. Soluble in ordinary organic solvents, insoluble in dilute mineral acids.

Specific Gravity (Water =1): 1.888 @ 20 deg C/4 deg C

pH :

3. FIRE / EXPLOSION HAZARD DATA

Flammability : No

LEL:

Flash Point °C in OC: -13

TDG Flammability:

UEL:

Flash Point °C in CC:

Autoignition Temperature °C :

Explosion sensitivity to impact:

Explosion sensitivity to static Electricity:

Hazardous Combustion Products : Fire may produce irritating, corrosive and/or toxic gases.

Hazardous Polymerization :

Combustible Liquid: Yes

Explosive Material:

Corrosive Material

Flammable Material: No

Oxidiser :

Others:

Pyrophoric Material:

Organic Peroxide :

4. REACTIVITY DATA

Chemical Stability : Stable

Incompatibility with other material : Arsenical vesicant vapors are decomposed rapidly by high humidity. Limited solubility slows the rate of the hydrolysis of liquid agents.

Reactivity : Decomposed by water and alkalis. Inactivated by bleaching powder.

Hazardous Reaction Products : When heated to decomposition it emits toxic fumes of hydrogen chloride and arsenic. Decomposed by water and alkalis. Inactivated by bleaching powder.

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, Ingestion, Skin and Eyes

Effects of Exposure / Symptoms:

Inhalation : Severe respiratory irritation leading to pulmonary edema and chemical pneumonitis may occur following acute exposure to lewisite. **Ingestion** : Nausea and vomiting and salivation may occur with exposure to lewisite. **Skin** : Severe vesication and burns have occurred following liquid and vapor exposure to lewisite. **Eye** : Tearing and burns or strong irritation occur to the eyes. A geranium-like odor may be apparent on the victim.

Emergency Treatment :

Inhalation: Move patient to fresh air. Monitor for respiratory distress. Administer oxygen and assist ventilation as required. Treat bronchospasm with beta2 agonist and corticosteroid aerosols.

Skin: Prompt decontamination is of utmost importance. Immediately wash skin and clothes with 5% solution of sodium hypochlorite or diluted liquid household bleach, within one minute if possible. Wash contaminated skin with so

Eyes: Immediately flush with running water for at least 20 minutes.

Ingestion: Do not induce emesis. Activated charcoal: administer charcoal as a slurry (240 ml water/30 g charcoal). Usual dose: 25 to 100 g in adults/adolescents.

LD50 (oral-rat) mg/kg:	50 mg/kg	STEL:	
LC50 (rat) mg/kg:		Odour Threshold:	1.40X10 ⁻² mg/L
Permissible Exposure Limit:	0.5 mg/m ³	TLV (ACGIH) :	0.5 mg/m ³

NFPA Hazard	Health	Flammability	Reactivity	Special
Signals	4	1	1	

6. PREVENTIVE MEASURES

Personal Protective : Wear appropriate protective gloves, clothing and goggles.

Equipment

Handling : All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood.

Storage : Keep in a cool, dry, dark location in a tightly sealed container or cylinder. Keep away from incompatible materials, ignition sources and untrained individuals. Secure and label area. Protect containers/cylinders from physical damage.

Precautions :

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media : Small Fires: Dry chemical, carbon dioxide or water spray. Large Fires: Dry chemical, carbon dioxide, alcohol-resistant foam or water spray.

Special Procedure : Wear full body protective clothing with breathing apparatus.DO

NOT use water on fires. Avoid spraying water onto liquid pools. Do not approach containers suspected to be hot.

Unusual Hazards : Container may explode in heat of fire. Fire may produce irritating and poisonous gases

EXPOSURE: First Aid Measures:

Inhalation: Move patient to fresh air. Monitor for respiratory distress. Administer oxygen and assist ventilation as required. Treat bronchospasm with beta2 agonist and corticosteroid aerosols.

Skin: Prompt decontamination is of utmost importance. Immediately wash skin and clothes with 5% solution of sodium hypochlorite or diluted liquid household bleach, within one minute if possible. Wash contaminated skin with so

Eyes: Immediately flush with running water for at least 20 minutes.

Ingestion: Do not induce emesis. Activated charcoal: administer charcoal as a slurry (240 ml water/30 g charcoal). Usual dose: 25 to 100 g in adults/adolescents.

Antidotes / Dosages:

SPILLS :

Steps To Be Taken : Eliminate all ignition sources. Stop leak if you can do it without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Do not get water inside containers.

Waste Disposal Method:

8. ADDITIONAL INFORMATION / REFERENCES

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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