



Material Safety Data Sheet
Allyl Bromide

SECTION 1.1 – PRODUCT IDENTIFICATION

Product name : **Allyl Bromide**
Molecular formula : **C3H5Br**
Molecular weight : **120.98**
CAS no. : **106-95-6**

SECTION: 1.2 – COMPANY IDENTIFICATION

Company Name: Indenta Chemicals (India) Pvt. Ltd.

Address: 117, The Summit Business Bay, Opp Cinemax, Off. Sir M.V. Road, Near WEH Metro Station, Andheri (E), Mumbai 400 093, India **Telephone #:**+91-22-26849600 **Fax #:**+91-22-26849060

SECTION 2: HAZARD IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Carcinogenicity	Category 1B

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor Causes severe skin burns and eye damage Toxic if swallowed Toxic if inhaled May cause cancer

Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep container tightly closed Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool
 Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

Rinse mouth
 Do NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

Other hazards

Stench.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Allyl Bromide	106-95-6	100

SECTION 4: FIRST AID MEASURES

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory

medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting. Call a physician or Poison Control Center immediately

Most important symptoms/effects: Breathing difficulties. Causes burns by all exposure routes. . Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician: Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Use water spray to cool unopened containers. chemical foam. Cool closed containers exposed to fire with water spray..

Unsuitable Extinguishing Media: No information available.

Flash Point: -1 °C / 30.2 °F

Method - No information available.

Autoignition Temperature 295 °C / 563 °F

Explosion Limits

Upper 7.3%

Lower 4.4%

Sensitivity to mechanical impact: No information available.

Sensitivity to static discharge: No information available.

Specific Hazards Arising from the Chemical:

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air. Do not allow run-off from fire fighting to enter drains or water courses

Hazardous Combustion Products: Carbon monoxide (CO) Carbon dioxide (CO₂) Hydrogen Halides

Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA: Health 3; Flammability 3; Instability 1; Physical Hazards N/A

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Evacuate personnel to safe areas

Environmental Precautions: Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information..

Methods for Containment and Clean Up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

SECTION 7: HANDLING AND STORAGE

Handling: Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray

mist. Do not get in eyes, on skin, or on clothing. Use explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. Wash hands before breaks and immediately after handling the product.

Storage: Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Guidelines:

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Allyl bromide	TWA: 0.1 ppm STEL: 0.2 ppm Skin		
Propylene oxide	TWA: 2 ppm	(Vacated) TWA: 20 ppm (Vacated) TWA: 50 mg/m ³ TWA: 100 ppm TWA: 240 mg/m ³	IDLH: 400 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWA EV
Propylene oxide	TWA: 20 ppm TWA: 48 mg/m ³	TWA: 20 ppm TWA: 50 mg/m ³	TWA: 2 ppm

Engineering Measures: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment:

Eye/face Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	No information available
Odor	Stench
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-119 °C / -182.2 °F
Boiling Point/Range	70 - 71 °C / 158 - 159.8 °F @ 760 mmHg
Flash Point	-1 °C / 30.2 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not Applicable
Flammability or explosive limits	

Upper	7.3%
Lower	4.4%
Vapor Pressure	147 mbar @ 20 °C
Vapor Density	4.2
Relative Density	1.390
Solubility	No information Available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	295 °C / 563 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C3 H5 Br
Molecular weight	120.98

SECTION 10: STABILITY AND REACTIVITY

Reactive Hazard: None known, based on information available.

Stability: Light sensitive.

Conditions to Avoid: Keep away from open flames, hot surfaces and sources of ignition. Exposure to light. Incompatible products.

Incompatible Materials: Strong oxidizing agents, Strong bases.

Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen halides

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing.

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Allyl bromide	120 mg/kg (Rat)	Not Listed	10 g/m ³ 30 min (Rat)
Propylene oxide	520 mg/kg (Rat)	1244 mg/kg (Rabbit)	9.48 mg/L (Rat) 4 h

Toxicologically Synergistic Products: No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation: Causes burns by all exposure routes.

Sensitization: No information available.

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Allyl bromide	106-95-6	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Propylene oxide	75-56-9	Group 2B	Reasonably Anticipated	A3	X	A3

Mutagenic Effects: No Information Available

Reproductive Effects: No information available.

Developmental Effects: No information available

Teratogenicity: No information available

STOT - single exposure: None known.

STOT - repeated exposure: None known

Aspiration hazard: No information available.

Symptoms / effects, both acute and delayed: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information: No information available

Other Adverse Effects: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Propylene oxide	240 mg/L EC50 = 96 h	215 mg/L LC50 96 h	EC50 = 3300 mg/L 160 min	350 mg/L EC50 = 48 h

Persistence and Degradability: Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation: No information available

Mobility: Will likely be mobile in the environment due to its volatility

Component	Log Pow
Allyl bromide	1.79
Propylene oxide	0.08

Section 13: DISPOSAL CONSIDERATION

Waste Disposal Methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: TRANSPORT INFORMATION

DOT:

UN-No UN1099

Proper Shipping Name ALLYL BROMIDE

Hazard Class 3

Subsidiary Hazard Class 6.1

Packing Group I

TDG:

UN- No UN1099

Proper Shipping Name ALLYL BROMIDE

Hazard Class 3

Subsidiary Hazard Class 6.1

Packing Group I

IATA:

UN-No UN1099

Proper Shipping Name ALLYL BROMIDE

Hazard Class 3

Subsidiary Hazard Class 6.1

Packing Group I

IMDG/IMO:

UN- No UN1099

Proper Shipping Name ALLYL BROMIDE

Hazard Class 3

Subsidiary Hazard Class 6.1

Packing Group I

15: OTHER REGULATORY INFORMATION**International Inventories:**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Allyl Bromide	X		X	203-446-6	-		X	X	X	X	-
Propylene Oxide	X	X	-	200-879-2	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations**TSCA 12(b)** Not applicable**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Propylene Oxide	75-56-9	0.03%	0.1

SARA 311/312 Hazardous Categorization:**Acute Health Hazard** Yes**Chronic Health Hazard** No**Fire Hazard** Yes

Sudden Release of Pressure Hazard No**Reactive Hazard No****Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Propylene Oxide	X	100lb	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Propylene oxide	X		

OSHA Occupational Safety and Health Administration: Not applicable**CERCLA:**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Propylene Oxide	100 lb	100 lb

California Proposition 65: This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Propylene oxide	75-56-9	Carcinogen	-	Carcinogen

State Right-to-Know:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Allyl Bromide	X	X	X	X	X
Propylene oxide	X	X	X	X	X

U.S. Department of Transportation:**Reportable Quantity (RQ):** N**DOT Marine Pollutant** N**DOT Severe Marine Pollutant** N**U.S. Department of Homeland Security**

This product contains the following DHS chemicals.

Component	DHS Chemical Facility Anti-Terrorism Standard
Propylene oxide	7500 lb STQ

Other International Regulations**Mexico – Grade:** No information available**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class:

B2 Flammable liquid

E Corrosive material

D1B Toxic materials

D2A Very toxic materials

SECTION 16: ADDITIONAL INFORMATION

This information is provided for documentation purposes only.

The information contained in this Certificate of Analysis and Material Safety Data Sheet is obtained from current and reliable sources. The information contained herein is true and to the best of Indenta Chemicals (India) Pvt. Ltd. knowledge. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any Laws or Regulation. Final determination of the suitability of the material is the sole responsibility of the user. Customers should purchase products from Indenta Chemicals (India) Pvt. Ltd. with the clear understanding that all products must be used at the customers own discretion and only after referencing Material Safety Data Sheets (MSDS) and all other relevant technical information specific to the product. Indenta Chemicals (India) Pvt. Ltd. shall not be held responsible for any damages to property or for any adverse physical effects (including injury or bodily harm) caused by insufficient knowledge or the improper use of a product. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As with any manufacturing process, Indenta Chemicals (India) Pvt. Ltd. strongly recommends small lab scale testing for evaluation purposes prior to full commercial manufacturing. The information on the Indenta Chemicals (India) Pvt. Ltd. website is obtained from current and reliable sources but makes no representation as to its comprehensiveness or accuracy. Nothing contained herein should be considered as a recommendation by Indenta Chemicals (India) Pvt. Ltd. as to the fitness for any use. As the ordinary or otherwise use(s) of this product is outside the control of Indenta Chemicals (India) Pvt. Ltd., no representation or warranty, expressed or implied is made as to the effect(s) of such use(s) (including damage or injury), or the results obtained. The liability of Indenta Chemicals (India) Pvt. Ltd. is limited to the value of the goods and does not include any consequential loss. Indenta Chemicals (India) Pvt. Ltd. shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon.