OTTO CHEMIE PVT LTD

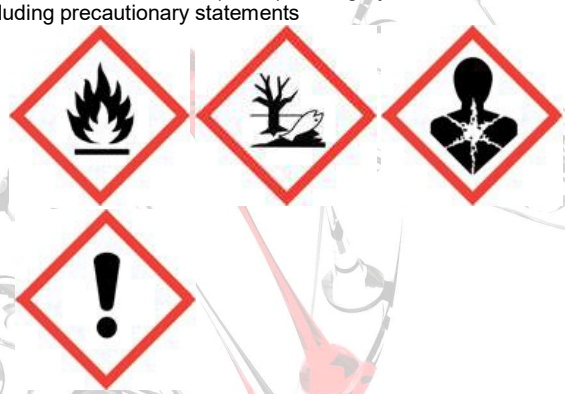
201, 51-53 Maroo Bhavan, Kalbadevi, Mumbai – 400002, India. Tel : + 91 22 2207 0099 / 6638 2599
Email : info@ottokemi.com, Web : www.ottokemi.com

----------ISO 9001: 2015----------

MATERIAL SAFETY DATA SHEET

1.Identification
1.1GHS Product identifier
Allyl chloride, puriss 98%+
Code A 1672

2.Hazard identification
2.1Classification of the substance or mixture
Flammable liquids, Category 2
Acute toxicity - Oral, Category 4
Acute toxicity - Dermal, Category 4
Skin irritation, Category 2
Eye irritation, Category 2
Acute toxicity - Inhalation, Category 4
Specific target organ toxicity \u2013 single exposure, Category 3
Germ cell mutagenicity, Category 2
Carcinogenicity, Category 2
Specific target organ toxicity \u2013 repeated exposure, Category 2
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
2.2GHS label elements, including precautionary statements
Pictogram(s)



Signal word	Danger
Hazard statement(s)	H225 Highly flammable liquid and vapour H302 Harmful if swallowed H312 Harmful in contact with skin H315 Causes skin irritation H319 Causes serious eye irritation H332 Harmful if inhaled H335 May cause respiratory irritation H341 Suspected of causing genetic defects H351 Suspected of causing cancer H400 Very toxic to aquatic life
Precautionary statement(s)	
Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P280 Wear protective gloves/protective clothing/eye protection/face protection. P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area.

	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P273 Avoid release to the environment.
Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. P370+P378 In case of fire: Use ... to extinguish. P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/\u2026if you feel unwell. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P312 Call a POISON CENTER/doctor/\u2026if you feel unwell. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P332+P313 If skin irritation occurs: Get medical advice/attention. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313 IF exposed or concerned: Get medical advice/ attention. P314 Get medical advice/attention if you feel unwell. P391 Collect spillage.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
Disposal	P501 Dispose of contents/container to ...

2.3Other hazards which do not result in classification
none

3.Composition/information on ingredients
3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Allyl chloride	Allyl chloride	107-05-1	none	100%

4.First-aid measures
4.1Description of necessary first-aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled
Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
In case of skin contact
Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .
In case of eye contact
First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.
If swallowed
Rinse mouth. Give a slurry of activated charcoal in water to drink. Give one or two glasses of water to drink. Refer for medical attention .
4.2Most important symptoms/effects, acute and delayed
Causes marked irritation of skin and may burn. Burns the eyes; effect may be delayed. (USCG, 1999)
4.3Indication of immediate medical attention and special treatment needed, if necessary
Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... .
For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport ... . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal ... . Cover skin burns with dry sterile dressings after decontamination ... . /Dichloropropane, dichloropropene, and related compounds/

5.Fire-fighting measures
5.1Extinguishing media
Suitable extinguishing media
Use water spray, dry chemical, alcohol foam or carbon dioxide. Use water to keep fire-exposed containers cool. If leak or spill has not ignited, use water spray to disperse vapors and to provide protection for men attempting to stop leak. Water spray may be used to flush spills away from exposures.
5.2Specific hazards arising from the chemical

Special Hazards of Combustion Products: Releases irritating hydrogen chloride gas on combustion (USCG, 1999)
5.3Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures
6.1Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
6.2Environmental precautions
Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.
6.3Methods and materials for containment and cleaning up
Remove all ignition sources. Ventilate area of spill or leak. For small quantities, absorb on paper towels. Evaporate in safe place (such as fume hood). Allow sufficient time for evaporating vapors to completely clear hood ductwork. Burn paper in suitable location...

7.Handling and storage
7.1Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
7.2Conditions for safe storage, including any incompatibilities
Fireproof. Separated from food and feedstuffs and incompatible materials. See Chemical Dangers. Dry.Ambient storage temperature, venting should be pressure-vacuum type.

8.Exposure controls/personal protection
8.1Control parameters
Occupational Exposure limit values
Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 1 ppm (3 mg/cu m).
Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 2 ppm (6 mg/cu m).
Biological limit values
no data available
8.2Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
8.3Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Respiratory protection
Wear dust mask when handling large quantities.
Thermal hazards
no data available

9.Physical and chemical properties

Physical state	clear liquid
Colour	RED LIQUID
Odour	Pungent, unpleasant odor.
Melting point/ freezing point	238\u00b0C(lit.)
Boiling point or initial boiling point and boiling range	45\u00b0C
Flammability	Class IB Flammable Liquid: Fl.P. below 22.78\u00b0C and BP at or above 37.78\u00b0C.Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 2.9% by volume; Upper flammable limit: 11.1% by volume
Flash point	-29\u00b0C(lit.)
Auto-ignition temperature	391.67\u00b0C (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	1 to 10 mg/mL at 18.89\u00b0C
Partition coefficient n-octanol/water (log value)	log Kow = 1.93 (est)
Vapour pressure	20.58 psi (55 \u00b0C)

Density and/or relative density	0.939
Relative vapour density	2.6 (vs air)
Particle characteristics	no data available

10.Stability and reactivity
10.1Reactivity
no data available
10.2Chemical stability
Stable under recommended storage conditions.
10.3Possibility of hazardous reactions
Dangerous fire and explosion hazard when exposed to heat or flame ...The vapour is heavier than air and may travel along the ground; distant ignition possible.ALLYL CHLORIDE presents a serious fire and explosion hazard when exposed to heat, flame or oxidizing agents. Polymerizes violently and exothermically with Lewis acids (aluminum chloride, boron trifluoride, sulfuric acid) or metals (aluminum, magnesium, zinc, or galvanized metal) [MCA SD-99, 1973]. Incompatible with acids (nitric acid, chlorosulfonic acid, oleum), with strong bases (sodium hydroxide, potassium hydroxide), with ethyleneimine and ethylenediamine [Lewis, 3rd ed., 1993, p. 36]. Attempts to alkylate benzene or toluene using allyl chloride in the presence of ethylaluminum chlorides have led to explosions.
10.4Conditions to avoid
no data available
10.5Incompatible materials
Contact with aluminum chloride, boron trifluoride, or sulfuric acid may cause a violent exothermic polymerization. Contact with aluminum, magnesium, zinc (or galvanized metals) may produce similar results.
10.6Hazardous decomposition products
Toxic gases and vapors (such as ... phosgene and carbon monoxide) may be released in fire ... .

11.Toxicological information
Acute toxicity
Oral: LD50 Mouse oral 425 mg/kg
Inhalation: LC50 Mouse inhalation 11,500 mg/cu m/2 hr
Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
CLASSIFICATION: C; possible human carcinogen. BASIS FOR CLASSIFICATION: Classification is based on a low (but biologically important) incidence of forestomach tumors in female mice and positive results in a variety of genetic toxicity tests. Allyl chloride is an alkylating agent and structurally related to probable human carcinogens. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Limited.
Reproductive toxicity
no data available
STOT-single exposure
no data available
STOT-repeated exposure
no data available
Aspiration hazard
no data available

12.Ecological information
12.1Toxicity
Toxicity to fish: LC50 Lepomis macrochirus (Bluegill) 59.3 mg/L/24 hr (95% confidence interval: 50.87-70.34 mg/L); static /formulated product
Toxicity to daphnia and other aquatic invertebrates: LC50 Daphnia magna (Waterflea) 250 mg/L/24 hr; static /formulated product
Toxicity to algae: no data available
Toxicity to microorganisms: no data available
12.2Persistence and degradability
AEROBIC: Allyl chloride, present at 100 mg/L, reached 62% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(1). In a standard biodegradability test using a sewage seed, 14 and 25% of the theoretical BOD was achieved in 5 days using nonacclimated and acclimated seed, respectively(2). In a test using activated sludge, allyl chloride was readily biodegradable(3).
12.3Bioaccumulative potential
BCF values of <0.14 and <1.3 when exposed to concns of 0.5 and 0.05 ppm, respectively, were measured for allyl chloride(SRC), using carp (Cyprinus carpio) which were exposed over a 6-week period(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).
12.4Mobility in soil

The Koc of allyl chloride is estimated as 51(SRC), using a water solubility of 3,370 mg/L(1) and a regression derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that allyl chloride is expected to have high mobility in soil.
12.5Other adverse effects
no data available

13.Disposal considerations
13.1Disposal methods
Product
The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging
Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14.Transport information
14.1UN Number
ADR/RID: UN1100 IMDG: UN1100 IATA: UN1100
14.2UN Proper Shipping Name
ADR/RID: ALLYL CHLORIDE
IMDG: ALLYL CHLORIDE
IATA: ALLYL CHLORIDE
14.3Transport hazard class(es)
ADR/RID: 3 IMDG: 3 IATA: 3
14.4Packing group, if applicable
ADR/RID: I IMDG: I IATA: I
14.5Environmental hazards
ADR/RID: yes IMDG: yes IATA: yes
14.6Special precautions for user
no data available
14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
no data available

15.Regulatory information
15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Allyl chloride	Allyl chloride	107-05-1	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

Section 16: Other Information
This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.