

Allyl chloride

sc-214524



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Allyl chloride

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY:

ChemWatch

Within the US & Canada: 877-715-9305

Outside the US & Canada: +800 2436 2255

(1-800-CHEMCALL) or call +613 9573 3112

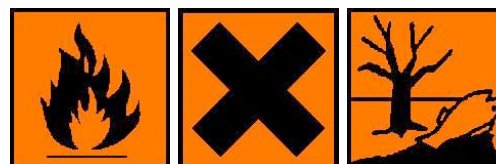
SYNONYMS

C3-H5-Cl, CH₂=CH-CH₂-Cl, 3-chloropropene, 3-chloropropylene, 3-chloroprene, 3-chloro-1-propene, 3-chloropropene-1, 3-chloro-1-propylene, chloroallylene, chlorallylene, "1-chloro propene-2", 1-chloro-2-propene, "1-propene, 3-chloro-", "propene, 3-chloro", "2-propenyl chloride", alpha-chloropropylene

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability:	4		
Toxicity:	4		
Body Contact:	2		
Reactivity:	2		
Chronic:	3		
			Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Limited evidence of a carcinogenic effect.

Possible risk of irreversible effects.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

Highly flammable.

Very toxic to aquatic organisms.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Oral doses of 300 or 500 mg/kg allyl chloride, three times weekly for periods of 2 to 17 weeks produced functional disability in some mice.

Apart from evidence of kidney damage in 70% of dosed animals pathological changes in the nervous system occurred.

■ At sufficiently high doses the material may be nephrotoxic(i.

e.

■ At sufficiently high doses the material may be hepatotoxic(i.

e.

EYE

■ This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation.

Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

■ Irritation of the eyes may produce a heavy secretion of tears (lachrymation).

SKIN

■ Skin contact with the material may be harmful; systemic effects may result following absorption.

■ This material can cause inflammation of the skin on contact in some persons.

■ The material may accentuate any pre-existing dermatitis condition.

■ Prolonged or repeated exposure to allyl chloride may cause severe skin burns, possibly of a delayed nature and/or deep seated pain.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

■ The material can cause respiratory irritation in some persons.

The body's response to such irritation can cause further lung damage.

■ Inhalation studies with allyl chloride show the liver, kidneys, nervous system and lungs may be injured following exposure.

Microscopic changes and other parameters indicative of kidney damage become progressively more severe in rats and mice with increasing levels of exposure (200 to 2000 ppm/ 6 hr).

CHRONIC HEALTH EFFECTS

■ There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of

appropriate studies using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects.

Chronic allyl chloride exposure produces toxic neuropathy.

Workers exposed to allyl chloride (during the manufacture of sodium allyl sulfonate) at levels of 2.6 to 6650 mg/m³ (0.83-2127 ppm) for 2.5 months to 6 years complained of weakness, paraesthesia and numbness of the extremities. Electroneuromyography showed neurogenic abnormalities in 10 of 19 subjects examined.

When administered by gavage to male and female mice allyl chloride produces neoplastic and non-neoplastic lesions of the forestomach. Allyl chloride was also active as a skin tumour initiator in a two-stage carcinogenicity assay with phorbol used as the

promoter.

Allyl chloride was not considered teratogenic or embryo-lethal in rats or rabbits following inhalation exposure at concentrations that induced effects in maternal animals.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
allyl chloride	107-05-1	> 97

Section 4 - FIRST AID MEASURES

SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ for poisons (where specific treatment regime is absent):

-----BASIC TREATMENT

· Establish a patent airway with suction where necessary.

· Watch for signs of respiratory insufficiency and assist ventilation as necessary.

DO NOT administer sympathomimetic drugs as they may cause ventricular arrhythmias.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	294.774 @ 20 C
Upper Explosive Limit (%):	11.2
Specific Gravity (water=1):	0.938 @ 20 C
Lower Explosive Limit (%):	2.9

EXTINGUISHING MEDIA

· Foam.

· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.

· May be violently or explosively reactive.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1000 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

■ Combustion products include: carbon dioxide (CO₂), hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material.

· Liquid and vapor are highly flammable.

· Severe fire hazard when exposed to heat, flame and/or oxidizers.

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Safety Glasses.

Chemical goggles.

Gloves:

1.PVA 2.TEFLON 3.VITON

Respirator:
Type AX-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- DO NOT allow clothing wet with material to stay in contact with skin.

Contains low boiling substance:

Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.

- Check for bulging containers.
- Vent periodically.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS

■ Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid.

- For low viscosity materials (i): Drums and jerricans must be of the non-removable head type. (ii): Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C).

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- Store at -20° C.
- No smoking, naked lights, heat or ignition sources.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
US NIOSH Recommended Exposure Limits (RELs)	allyl chloride (Allyl chloride)	1	3	2	6				
Canada - Alberta Occupational Exposure Limits	allyl chloride (Allyl chloride)	1	3.1	2	6.2				
Canada - British Columbia Occupational Exposure Limits	allyl chloride (Allyl chloride)	1		2					
US OSHA Permissible Exposure Levels (PELs) - Table Z1	allyl chloride (Allyl chloride)	1	3						
US ACGIH Threshold Limit Values (TLV)	allyl chloride (Allyl chloride)	1		2					TLV Basis: Eye & upper respiratory tract irritation;

						liver & kidney damage
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	allyl chloride (Allyl chloride)	1	3	2	6	
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3			
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3	2	6	
US - Minnesota Permissible Exposure Limits (PELs)	allyl chloride (Allyl chloride)	1	3	2	6	
US - California Permissible Exposure Limits for Chemical Contaminants	allyl chloride (Allyl chloride)	1	3	2	6	
US - Idaho - Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3			
US - Hawaii Air Contaminant Limits	allyl chloride (Allyl chloride)	1	3	2	6	
US - Alaska Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3	2	6	
US - Michigan Exposure Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3	2	6	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	allyl chloride (Allyl chloride)	1	3	2	6	
US - Washington Permissible exposure limits of air contaminants	allyl chloride (Allyl chloride)	1		2		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	allyl chloride (Allyl chloride)	1		2		

Canada - Prince Edward Island Occupational Exposure Limits	allyl chloride (Allyl chloride)	1	2				TLV Basis: Eye & upper respiratory tract irritation; liver & kidney damage
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	allyl chloride (Allyl chloride)	1	3				
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	allyl chloride (3-Chloropropene)	1	3	2	6		
US - Oregon Permissible Exposure Limits (Z-1)	allyl chloride (Allyl chloride)	1	3				
Canada - Northwest Territories Occupational Exposure Limits (English)	allyl chloride (Allyl chloride)	1	3.2	2	6.3		
Canada - Nova Scotia Occupational Exposure Limits	allyl chloride (Allyl chloride)	1		2			TLV Basis: Eye & upper respiratory tract irritation; liver & kidney damage
US TSCA New Chemical Exposure Limits (NCEL)	allyl chloride (Halogenated alkene (P84-105))	0.05					

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

· Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Neoprene gloves.

OTHER

- Overalls.

- PVC Apron.

- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.

- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

ENGINEERING CONTROLS

- CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

State	Liquid	Molecular Weight	76.53
Melting Range (°F)	-214	Viscosity	Not Available
Boiling Range (°F)	111- 118 (96% min)	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	-24(TCC)	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	736	Vapor Pressure (mmHg)	294.774 @ 20 C
Upper Explosive Limit (%)	11.2	Specific Gravity (water=1)	0.938 @ 20 C
Lower Explosive Limit (%)	2.9	Relative Vapor Density (air=1)	2.64
Volatile Component (%vol)	~100	Evaporation Rate	Not available
Gas group	IIA		

APPEARANCE

A mobile liquid. Colourless or pale yellow ("water-washed" grade) to dark brown or purple (anhydrous grade). It has a characteristic unpleasant, irritating and penetrating pungent odour. Slightly miscible with water (0.36%at 25 C). Miscible with alcohol, ether, petroleum ether, acetone, chloroform, and benzene.

Water solubility 3600 mg/l (20 C)log Kow 2.1

Material	Value
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Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Allyl chloride

- may polymerise violently and explodes at elevated temperatures, on exposure to light, on contact with acid catalysts, ferric chloride, aluminium chloride, Lewis acids, boron trifluoride, sulfuric acid, Ziegler catalysts, finely divided metals.

- reacts violently with oxidisers, alkyl aluminium chlorides or on contact with aluminium, magnesium, zinc (or galvanised metals) producing organometallic compounds
 - is incompatible with strong acids, oleum, amines, chlorosulfonic acid, ethylenediamine, ethyleneimine, sodium hydroxide
 - slowly decomposes in the presence of moisture
 - attacks some coatings, plastics and rubber
 - is corrosive to steel
 - may generate static charge on flow or agitation.
- Haloalkenes are highly reactive. Some of the more lightly substituted lower members are highly flammable; many members of the group are peroxidizable and polymerizable.
- Avoid strong bases.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

allyl chloride

TOXICITY AND IRRITATION

ALLYL CHLORIDE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Inhalation (human) LCLo: 3000 ppm	Eye (rat): 290 ppm/6h
Oral (rat) LD50: 460 mg/kg	Skin (rabbit): 10 mg/24h (open)
Inhalation (rat) LC50: 11000 mg/m ³ /2h	Eye (rabbit): 500 mg - Moderate
Oral (mouse) LD50: 425 mg/kg	Eye (guinea pig): 290 ppm/6h
Inhalation (mouse) LC50: 155 mg/kg	
Intraperitoneal (mouse) LD50: 155 mg/kg	

Dermal (rabbit) LD50: 2066 mg/kg

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

Allyl chloride was found to be harmful in acute oral toxicity tests and toxic in inhalation toxicity tests. No overall NOAEL could be established from the oral studies in mice, rats and rabbits.

Inhalation studies have been carried out in mice, rats, rabbits and cats with exposures varying from 5 weeks to 6 months. The target organs were liver, kidneys and lungs and the central nervous system. In a recent adequate study, not focusing on neurotoxicity, with rats the NOAEL was 155 mg/m³ (duration adjusted: 27 mg/m³). At higher dose levels slight tubular degeneration in the kidneys of both sexes was observed.

The neurotoxic effects of allyl chloride have been studied extensively in mice, rats, rabbits and cats. Allyl chloride is a neurotoxic agent, which especially damages the peripheral nervous system resulting in a dying-back pattern of axonal degeneration. In the most reliable study a NOAEL for neurotoxicity of 31 mg/m³ (duration adjusted: 7.38 mg/m³) has been established.

Reproduction studies have not been carried out with allyl chloride. However, effects on the male reproductive system were investigated in vitro as well as in vivo. Testosterone production was not affected in rat foetal testes in vitro. Effects on the male gonads of rats and rabbits were observed in vivo. In mice, which survived a single s.c.dose = 496 mg/kg b.w. allyl chloride, various degrees of damage in the testes was observed. However, no histopathological effects were found in the testes of rats after subchronic inhalatory exposure to concentrations = 782.5 mg/m³. In developmental studies with rats and rabbits by the inhalation route a slight delay in skeletal development in rats was observed at maternal toxic doses. In adequately performed studies the NOAEL for foetal/embryo and maternal toxicity was 93 mg/m³ (duration adjusted: 27.3 mg/m³).

Based on all available mutagenicity data it can be concluded that allyl chloride is mutagenic to bacteria and yeast and induces UDS in human HeLa cells, but not in embryonic testinal cells. Allyl chloride did not cause chromosome aberrations in vitro in mammalian cells. Negative results were obtained in the available in vivo tests.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

CARCINOGEN

Allyl chloride	International Agency for Research Group	3
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	on Cancer (IARC) - Agents Reviewed by the IARC Monographs		
Allyl chloride	US EPA Carcinogens Listing	Carcinogenicity	C
Allyl chloride	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	C
Allyl chloride	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A3
allyl chloride	US - Rhode Island Hazardous Substance List	IARC	
ALLYL CHLORIDE	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	EPA-HEN, IRIS, OEHHA-TCD
Allyl chloride	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	3
allyl chloride	US - Maine Chemicals of High Concern List	Carcinogen	C
TWAPPM~	US - Maine Chemicals of High Concern List	Carcinogen	A3

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms.
 This material and its container must be disposed of as hazardous waste.
 Avoid release to the environment.
 Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
allyl chloride	LOW	LOW	LOW	HIGH

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
 _____ 3- 478 106 1 1 R 3 NI 1 0 2 1 3 T E 3 Chloropro pylene / CAS:107- 05- 1 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
 NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation,
 B1=Acuteaquatic toxicity LC/EC150 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg),
 C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation &
 corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats,
 E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3:
 C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury,
 N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater,
 F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard.
 (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information
 Ignitability characteristic: use EPA hazardous waste number D001 (waste code I)

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
 † Puncture containers to prevent re-use and bury at an authorized landfill.
 Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
 A Hierarchy of Controls seems to be common - the user should investigate:
 · Reduction
 · Reuse
 · Recycling

· Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

· Recycle wherever possible.

· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: None Hazard class or Division: 3

Identification Numbers: UN1100 PG: I

Label Codes: 3, 6.1 Special provisions: T14, TP2, TP13

Packaging: Exceptions: None Packaging: Non- bulk: 201

Packaging: Exceptions: None Quantity limitations: Forbidden

Passenger aircraft/rail:

Quantity Limitations: Cargo 30 L Vessel stowage: Location: E aircraft only:

Vessel stowage: Other: 40 S.M.P.: YES

Hazardous materials descriptions and proper shipping names:

Allyl chloride

Air Transport IATA:

UN/ID Number: 1100 Packing Group: I

Special provisions: None

Cargo Only

Packing Instructions: 361 Maximum Qty/Pack: 30 L

Passenger and Cargo Passenger and Cargo

Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden

Shipping Name: ALLYL CHLORIDE

Maritime Transport IMDG:

IMDG Class: 3 IMDG Subrisk: 6.1

UN Number: 1100 Packing Group: I

EMS Number: F-E,S-D Special provisions: None

Limited Quantities: 0 Marine Pollutant: Yes

Shipping Name: ALLYL CHLORIDE

Section 15 - REGULATORY INFORMATION

allyl chloride (CAS: 107-05-1) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category II","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know

Hazardous Substances","US - Oregon Hazardous Materials","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Dangerous waste constituents list","US - Washington Permissible exposure limits of air contaminants","US - Wyoming List of Highly Hazardous Chemicals, Toxics and Reactives","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US ACGIH Threshold Limit Values (TLV) - Notice of Intended Changes","US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)","US Clean Air Act - Hazardous Air Pollutants","US CWA (Clean Water Act) - List of Hazardous Substances","US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US Department of Transportation (DOT) Marine Pollutants - Appendix B","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA Acute Exposure Guideline Levels (AEGs) - Interim","US EPA Carcinogens Listing","US EPA High Production Volume Program Chemical List","US EPA Master Testing List - Index I Chemicals Listed","US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA List of Highly Hazardous Chemicals, Toxics and Reactives","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Inorganic and Organic Constituents 1","US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Cumulative effects may result following exposure*.
- May be harmful to the fetus/ embryo*.

* (limited evidence).

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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