

Safety Data Sheet

1. Chemical product and company identification

Product name : 3-Chloropropene

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 01128
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 2
	Self-reactive substances and mixtures	Type G
Health hazards	Corrosive to metals	Category 1
	Acute toxicity (oral)	Category 4
	Acute toxicity (inhalation:vapors)	Category 3
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (respiratory organs)
	Specific target organ toxicity (single exposure)	Category 2 (nervous system, cardiovascular, liver, kidney)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (repeated exposure)	Category 1 (nervous system, respiratory organs, kidney)
Environmental hazards	Specific target organ toxicity (repeated exposure)	Category 2 (blood)
	Aquatic acute	Category 2

Hazard pictograms



Signal word : Danger



Kanto Chemical Co., Inc.

Hazard statements	: Highly flammable liquid and vapor May be corrosive to metals Harmful if swallowed Causes skin irritation Causes serious eye damage Toxic if inhaled May cause drowsiness or dizziness May cause cancer Causes damage to organs (respiratory organs) May cause damage to organs (nervous system, cardiovascular, liver, kidney) Causes damage to organs (nervous system, respiratory organs, kidney) through prolonged or repeated exposure May cause damage to organs (blood) through prolonged or repeated exposure Toxic to aquatic life
Precautionary statements	
Prevention	: Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Keep only in original container. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN: Wash with plenty of water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER or doctor. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor. Call a POISON CENTER or doctor. Call a POISON CENTER or doctor if you feel unwell. Get medical advice/attention if you feel unwell. Rinse mouth. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.
Storage	: Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.



Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance
Synonyms : Allyl chloride

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
3-Chloropropene	≥ 98	C3H5Cl	Listed	203-457-6	107-05-1

*Stabilized with propylene oxide.

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical treatment.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

First-aid measures after ingestion : The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

Most Important Symptoms/Effects

Symptoms/effects : Inhalation of vapors may cause cough, sore throat, headache, dizziness, stomach cramps, burning sensation, vomiting, breathlessness, and loss of consciousness.

5. Fire fighting measures

Suitable extinguishing media : Dry chemical, CO₂, dry sand, or alcohol-resistant foam

Unsuitable extinguishing media : Water spray, Foam extinguisher

Fire hazard : Thermal decomposition emits harmful hydrogen chloride.

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Fight fire from windward.
Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures



General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.

Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.
Ventilate well at working places.
Prevent build-up of electrostatic charges (e.g. by grounding) .

Precautions for safe handling : Avoid formation of vapor and aerosols.
Do not allow contact with oxidizing substances.

Storage

Storage conditions : Store in a dark, cool place and tightly closed.

Material used in packaging/containers : Glass, fluorine resin.
Do not use vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	1 ppm
ACGIH STEL	2 ppm
Remark (ACGIH)	Skin

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : Chemical cartridge respirator with an organic vapor cartage or airline respirator

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid

Color : Colorless - pale yellow

Odor : Unpleasant

pH : No data available



Melting point	: -134.5 ° C
Freezing point	: No data available
Boiling point	: 44.96 ° C
Flash point	: -31.7 ° C
Auto-ignition temperature	: 487 ° C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 489 hPa (25°C)
Relative density	: No data available
Density	: 0.936 - 0.945 g/cm ³ (20°C)
Relative gas density	: 2.64
Solubility	: Organic solvents: Soluble in ethanol, diethyl ether. Water: 0.36 % (20°C)
Partition coefficient n-octanol/water (log Pow)	: 2.1
Explosive limits (vol %)	: 2.9 - 11.3 vol %
Viscosity, kinematic	: 0.36 mm ² /s (20°C)
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: Chlorine atoms are highly reactive and easily carry out a substitution reaction. Polymerizes when in contact with peroxide. May react with oxidizing substances.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Thermal decomposition emits harmful hydrogen chloride.
Conditions to avoid	: Light, heat.
Incompatible materials	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide, chlorine, hydrogen chloride.

11. Toxicological information

Acute toxicity (oral)	: Harmful if swallowed rat LD50=450 mg/kg
Acute toxicity (dermal)	: No classification rat LD50=2200 mg/kg
Acute toxicity (inhalation)	: No classification (gas) Toxic if inhaled (vapor) rat LC50=2000 ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: Causes skin irritation Skin contact with this liquid causes redness in the skin, burning, pain, and severe bone pain several hours after contact. Prolonged skin contact may cause erythema and edema. Exposure to very small amounts of this liquid may also result in profound pain near skin contact sites. Thus, it was classified into category 2.



Serious eye damage/irritation	: Causes serious eye damage Eye contact with this substance may cause severe eye irritation with pain and corneal damage, sometimes resulting in persistent visual impairment. The vapour of this substance is also irritating to the eyes, but effects may occur late. Thus, it was classified into category 1.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification In the murine local lymphatic test (LLNA) (OECD TG 429, GLP), SI levels were reported to be 0.78 (25%), 0.75 (50%), and 1.97 (100%).
Germ cell mutagenicity	: Classification not possible As for in vivo, the results were negative in the dominant lethal test in rats, the chromosomal aberration test in bone marrow cells in rats, the micronucleus test in bone marrow cells in rats, and the micronucleus test in bone marrow cells in mice. However, it has been noted that these information do not meet the criteria of current guidelines. As for in vitro, a positive (partially negative) bacterial reverse mutation test and a positive or negative chromosomal aberration test using cultured mammalian cells have been obtained.
Carcinogenicity	: May cause cancer In a carcinogenicity study by inhalation exposure in rats and mice for 104 weeks, a significant increasing trend and a significant increase in the incidence of transitional cell carcinoma of the urinary bladder were observed in males in a rat study. There was also a significant positive trend in the incidence of thyroid tumors, lung tumors, and the incidence of peritoneal mesothelioma, keratoacanthoma of the skin, and fibroadenoma of the mammary gland in males. On the other hand, there was no significant increase in the incidence of tumours in female rats. In mouse studies, there was a significant positive trend and a significant increase in the incidence of both male and female Harderian gland adenomas and bronchiole-alveolar adenomas of the lung. Based on evidence-of-carcinogenicity in laboratory studies, the substance was classified into category 1B.
Reproductive toxicity	: Classification not possible Some reports suggested developmental effects, but these were minor and considered inadequate as a basis. Also, there is no information on the effect on fecundity. Based on the above, patients were classified as "Classification not possible" due to insufficient data.



STOT-single exposure	: Causes damage to organs (respiratory organs) May cause damage to organs (nervous system, cardiovascular, liver, kidney) May cause drowsiness or dizziness In humans, the substance may cause irritation of the eyes, skin and respiratory tract, resulting in effects on the central nervous system. Inhalation may cause cough, sore throat, headache, dizziness, weakness, breathlessness, vomiting, and unconsciousness. Skin contact may cause redness, burning sensation, pain, and redness, pain, or blurred vision upon entry into the eye. Inhalation of high concentrations of the vapour may cause lung oedema. Oral administration to rats resulted in oedema of the gastrointestinal mucosa, inflammation, degeneration of cardiomyocytes, hepatocytes, and renal tubular cells, congestion of the gastrointestinal tract, hemorrhage, and injury of kidney and liver tissues, with LD50 reported to be 450-700 mg/kg. Observations of clinical signs showed decreased activity, lethargy, hind limb paralysis, tremor, convulsion, etc. and the causes of death included respiratory disorders. Mice exposed to high concentrations exhibit anesthetic effects over a short period of time and die from respiratory damage. Delayed respiratory mucosal irritation and anesthetic effects are observed in rats and guinea pigs following inhalation exposure. Thus, it was classified into category 1 (respiratory organs), category 2 (nervous system, cardiovascular, liver, kidney) and category 3 (narcosis).
STOT-repeated exposure	: Causes damage to organs (nervous system, respiratory organs, kidney) through prolonged or repeated exposure May cause damage to organs (blood) through prolonged or repeated exposure In humans, lacrimation and irritation of the mucous membranes were observed in 26 women exposed to the substance from the beginning of the exposure period. Examination of the peripheral nerves revealed abnormal pain sensation in 17 patients, and other examinations revealed abnormal tactile sensation, vibratory sensation, muscle weakness, and loss of the Achilles tendon reflex. Neuromuscular electromyography also showed abnormalities, and it has been reported that chronic polyneuropathy due to chronic exposure to this substance was diagnosed. In a 13-week repeated-dose inhalational exposure study in rats, 25 50 ppm reported tissue changes in the nasal cavity, 100 and 200 ppm reported effects in the nasal cavity, lungs, kidneys, and blood. In a 2-year carcinogenicity study by inhalation exposure in rats, it was reported that nasal and renal effects were observed in 25 and 50 ppm, and kidney and Harderian gland effects were observed in 100 ppm. Thus, it was classified into category 1 (nervous system, respiratory organs, kidney), category 2 (blood).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: Toxic to aquatic life Poecillia reticulata LC50=1.2 mg/L/14-day
Aquatic chronic	: No classification



Persistence and degradability

Readily biodegradable
BOD : 62%

Bioaccumulative potential

Low bioconcentration
BCF : ≤ 0.14 – 0.88 (0.5 mg/L), ≤ 1.3 – 5.6 (0.05 mg/L)

Mobility in soil

High mobility
Koc : 40

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
The incinerator should be suitable for burning organic halogen compounds.
Alkaline solution should be used for cleaning liquid of the scrubber.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information**International Regulations****Transport by sea(IMDG)**

UN-No. (IMDG) : 1100
Proper Shipping Name (IMDG) : ALLYL CHLORIDE
Packing group (IMDG) : I
Transport hazard class(es) : 3 (6.1)
(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1100
Proper Shipping Name (IATA) : Allyl chloride
Packing group (IATA) : I
Transport hazard class(es) : 3 (6.1)
(IATA)

Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y
MFAG-No : 131

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : NITE Chemical Risk Information Platform (NITE-CHRIP), National



Institute of Technology and Evaluation.
Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd.
(1976) .
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of Dangerous Substances Springer-Verlag Tokyo
(1991) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253.

