

Nanjing Chemical Material Corp.

No.5 New Model Rd, Nanjing,  
210009, China

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## SAFETY DATA SHEET

### 1. Identification of the substance/preparation and of the company/undertaking

Trade name : Allyl alcohol  
 Synonyms : Propenyl alcohol; 2-Propene-1-ol; 3-Hydroxypropene;  
 Company/undertaking identification AAL : Nanjing Chemical Material Corp.  
 Address : No.5 New Model Rd, Nanjing 210009, China  
 Department name : Import & Export Dept.  
 Tel. : +86-25-52337978  
 Fax : +81-25-52337978  
 e-mail : info @njchemm.com  
 Emergency number : +86-25-52337978  
 Recommended uses and restrictions : Industrial use  
 Reference no. : OC-1001\_UN  
 Web : www.njchm.com

### 2. Hazards identification

#### [GHS classification]

Physical hazards : Flammable liquids, Category 2  
 : Self-Reactive Substances and Mixtures, Type G  
 Health hazards : Acute toxicity (oral), Category 3  
 : Acute toxicity (dermal), Category 1  
 : Acute toxicity (inhalation:vapour) Category 2  
 : Skin corrosion/irritation, Category 2  
 : Serious eye damage/eye irritation, Category 2A  
 : Specific target organ toxicity — Single exposure, Category 1 (central nervous system, lung, liver, kidneys)  
 : Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation  
 : Specific target organ toxicity — Repeated exposure, Category 1 (liver, kidneys)  
 Environmental hazards : Hazardous to the aquatic environment — Acute Hazard, Category 1  
 Other hazards than mentioned above are Not classified or Not applicable or Classification not possible.

#### [GHS label elements]

Hazard pictograms (GHS) :



Signal word (GHS) :

: Danger

Hazard statements (GHS)	:	<p>(H225) Highly flammable liquid and vapour  (H301) Toxic if swallowed  (H310) Fatal in contact with skin  (H330) Fatal if inhaled  (H315) Causes skin irritation  (H319) Causes serious eye irritation  (H370) Causes damage to organs (central nervous system, lung, liver, kidneys)  (H335) May cause respiratory irritation  (H372) Causes damage to organs (liver, kidneys) through prolonged or repeated exposure  (H400) Very toxic to aquatic life</p>
Precautionary statements		
Prevention	:	<p>(P210) Keep away from heat/sparks/open flames/hot surfaces. - No smoking  (P233) Keep container tightly closed  (P240) Ground/bond container and receiving equipment  (P241) Use explosion-proof electrical/ventilating/lighting equipment  (P242) Use only non-sparking tools  (P243) Take precautionary measures against static discharge  (P260) Do not breathe dust/fume/gas/mist/vapours/spray  (P262) Do not get in eyes, on skin, or on clothing  (P264) Wash hands thoroughly after handling  (P270) Do not eat, drink or smoke when using this product  (P271) Use only outdoors or in a well-ventilated area  (P273) Avoid release to the environment  (P280) Wear protective gloves/protective clothing/eye protection/face protection  (P284) Wear respiratory protection</p>
Response	:	<p>(P301+P310) IF SWALLOWED: immediately call a POISON CENTER or doctor/physician  (P330) If swallowed, rinse mouth  (P303+P361+P353) IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  (P310) If on skin, if in eyes, if swallowed, and if inhaled, immediately call a doctor  (P332+P313) If on skin and if skin irritation occurs, seek medical advice and attention  (P361+P364) Take off immediately all contaminated clothing and wash it before reuse  (P304+P340) If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing  (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  (P308+P311) IF exposed or concerned: Call a POISON CENTER/doctor  (P370+P378) In case of fire: Use Carbon dioxide, Alcohol resistant foam, Powders for extinction  (P391) Collect spillage</p>
Storage	:	<p>(P403+P233) Store in a well-ventilated place. Keep container tightly closed  (P403+P235) Store in a well-ventilated place. Keep cool  (P405) Store locked up</p>
Disposal	:	<p>(P501) Dispose of contents/container in accordance with local/regional/national/international regulations</p>

### 3. Composition/information on ingredients

Distinction of substance or mixture	:	Substance
Generic name	:	Allyl alcohol
Synonyms	:	Propenyl alcohol; 2-Propene-1-ol; 3-Hydroxypropene; AAL

Name	CAS No	Concentration	Formula
Allyl alcohol	107-18-6	>= 99.0%	CH <sub>2</sub> =CHCH <sub>2</sub> OH

### 4. First aid measures

First-aid measures after inhalation	:	Immediately call a POISON CENTER or doctor/physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Make the affected person rest and keep at warm. If unconscious place in recovery position and seek medical advice. Give artificial respiration if necessary.
First-aid measures after skin contact	:	Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
First-aid measures after eye contact	:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	:	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
Personal Protection in First Aid and Measures	:	Wear suitable protective clothing, gloves and eye or face protection. Wear suitable respiratory equipment.
Other medical advice or treatment	:	Prolonged medical observation may be indicated.

### 5. Fire fighting measures

Suitable extinguishing media	:	Carbon dioxide (CO <sub>2</sub> ) Alcohol resistant foam Powders Water spray
Unsuitable extinguishing media	:	Do not use water jet.
Fire hazard	:	Highly flammable liquid and vapour. Heat may cause pressure rise with explosion of tanks/drums. In case of fire, corrosive and harmful gases come free.
Firefighting instructions	:	In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Apply water spray or fog to cool nearby equipment. Move undamaged containers from immediate hazard area if it can be done safely.
Personal protection (Emergency response)	:	Use a self-contained breathing apparatus and also a protective suit. Do the fire fighting from windward side to avert inhale a hazardous gas.

### 6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures	:	Mark out the contaminated area with signs and prevent access to unauthorized personnel. Wear suitable protective clothing, gloves and eye or face protection
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- Ventilate spillage area.  
Stop leak if safe to do so.
- Environmental precautions : Do not allow product to spread into the environment.  
Prevent entry to sewers and public waters.
- Methods and Equipment for Containment and Cleaning up : Collect leaking and spilled liquid in sealable containers as far as possible.  
Take up large spills with pump or vacuum and finish with dry chemical absorbent.
- Prevention Measures for Secondary Accidents : Eliminate all ignition sources if safe to do so.  
Use non-sparking tools.

## 7. Handling and storage

### Handling

- Technical measures : Provide ventilation system and use necessary personal protective equipment as described in "8. EXPOSURE CONTROLS AND PERSONAL PROTECTION."
- Local and general ventilation : Provide local ventilations and a full ventilation system as described in "8. EXPOSURE CONTROLS AND PERSONAL PROTECTION."
- Handling the product : Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.  
Keep container tightly closed.
- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Prevent shock/impact.
- Hygiene measures : Do not eat, drink or smoke when using this product.  
Wash contaminated clothing before reuse.  
Always wash hands after handling the product.  
Do not breathe dust/fume/gas/mist/vapours/spray.
- Storage precautionary statements
- Technical measures : Open flames prohibited.  
Store locked up.  
Ground/bond container and receiving equipment.  
Store in tightly closed containers.
- Storage conditions : Keep out of direct sunlight.  
Store under nitrogen.  
Store, if possible, in a cool, well ventilated place away from incompatible materials.
- Material used in packaging/containers : Store in accordance with local/regional/national/international regulations.

## 8. Exposure controls / Personal protection equipment

### Occupational exposure limits

- Allyl alcohol [107-18-6]  
Exposure limits (ACGIH) : TWA 0.5 ppm, STEL - (Skin)

### Appropriate engineering controls

- : Handle product only in closed system or provide appropriate exhaust ventilation.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Emergency eye wash fountains and safety showers should be available

in the immediate vicinity of any potential exposure.

### Protective equipment

Respiratory protection	:	Self contained breathing apparatus, Approved organic vapour respirator, Supplied-Air Respirator (SAR)
Hand protection	:	Protective gloves Neoprene protective gloves Time of penetration is to be checked with the glove producer.
Eye protection	:	Tightly fitting safety goggles
Skin and body protection	:	According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn.

## 9. Physical and chemical properties

Appearance	:	Colorless liquid
Colour	:	Colourless , clear
Odour	:	Strong, irritating
pH	:	No data available
Melting point	:	-129 °C
Boiling point	:	97.0 °C (at 1013.25 hPa)
Flash point	:	21 °C (closed cup)
Explosive limits (g/m <sup>3</sup> )	:	No data available
Explosive limits (vol %)	:	2.5 - 18.0 vol %
Vapour pressure	:	25 hPa (at 20 °C)
Relative vapour density at 20 °C	:	2 (Air=1)
Specific gravity density	:	0.8540 (at 20 °C)
Density	:	0.8540 g/cm <sup>3</sup> (at 20 °C)
Log Pow	:	0.17
Auto-ignition temperature	:	443 °C

## 10. Stability and reactivity

Reactivity	:	Highly flammable liquid and vapour.
Chemical stability	:	Prolonged storage. May polymerize. Very slow oxidation to air.
Possibility of hazardous reactions	:	Can react violently with Carbon tetrachloride, Nitric acid, Chlorosulfonic acid.
Conditions to avoid	:	Heat high temperatures, naked flames
Incompatible materials	:	Strong oxidizing agent Carbon tetrachloride Nitric acid CHLOROSULPHONIC ACID Oleum Sulfuric acid Sodium hydroxide Alkali metals Magnesium Aluminium and its alloys
Hazardous decomposition products	:	Thermal decomposition may produce : Carbon monoxide

## 11. Toxicological information

### Toxicological information of Allyl alcohol

- Acute toxicity (oral) : Toxic if swallowed.  
 •Rat: LD50 99~105mg/kg, 70mg/kg, 64mg/kg (SIDS)
- Acute toxicity (dermal) : Fatal in contact with skin.  
 •Rabbit: LD50 89mg/kg, 45mg/kg (SIDS)
- Acute toxicity (vapour) : Fatal if inhaled.  
 •Rat: LC50(4hr) 300~330mg/m<sup>3</sup>(SIDS), 165ppm(Systemic exposure) (ACGIH, DFGMAK)
- Acute toxicity (mist) : Classification not possible.  
 •Rat: LC50(4hr) >0.5mg/L(Nose exposure) (SHOWA DENKO K.K. Test Report)
- Skin corrosion/irritation : Causes skin irritation.  
 •In a skin irritation study with rabbits, mild irritation was observed. (SIDS)  
 •Through skin absorption, it causes convulsions, and consequently myalgia. (SIDS)
- Serious eye damage/eye irritation : Causes serious eye irritation.  
 •In an eye irritation study with rabbits, irritation was observed. (SIDS)  
 •According to a report, a man exposed to its vapor lost eyesight temporarily due to delayed corneal necrosis. (SIDS)
- Skin sensitization : Not classified.  
 •In a skin sensitization study with guinea pigs, it did not sensitize the animal. (SIDS)
- Respiratory sensitization : Classification not possible.  
 •No information available for the product.
- Germ cell mutagenicity : Classification not possible.  
 •In an in vivo micronucleus study in which rats were injected with it intraperitoneally, followed by examination of their bone marrow cells, the results were negative. (SIDS)  
 •In an in vivo micronucleus study in which mice were orally treated with it for 13 weeks, followed by examination of their peripheral blood, the results were negative. (SIDS)  
 •In an in vivo dominant lethality study in which rats were orally treated with it for 33 weeks, the results were negative. (SIDS)  
 •In a gene mutagenicity study with Chinese hamster cells (V79), the results were positive. (SIDS)  
 •In Amesne mutagenicity study with Chinese hamster cells (V79), the results were positive.
- Carcinogenicity : Classification not possible.  
 •Evaluation of carcinogenicity by ACGIH: A4 (Not classifiable as a human carcinogen)
- Reproductive toxicity : Classification not possible.  
 •In a screening test for reproductive toxicity study with rats (oral administration), toxic symptoms in parent animals (necrosis of hepatocytes, etc.), prolongation of the estrus cycle in females, reduced 4-day survival rate in offspring, and death of all the litter of one dam were observed in the 40 mg/kg/day group, but no other abnormalities were detected in the reproductive indices or the offspring. NOAEL for parent animals and offspring pertaining to the reproductive toxicity

		was 8 mg/kg/day. (SIDS)
		<ul style="list-style-type: none"> <li>• In a developmental toxicity study in which rats were treated orally with it from Day 6 until Day 19 of gestation, loss of the entire litter was observed in the 35 mg/kg/day and higher dose groups, but the cases of malformation or mutation did not increase. (SIDS)</li> </ul>
Specific target organ toxicity (single exposure)	:	<p>Causes damage to organs (central nervous system, lung, liver, kidneys.; May cause respiratory irritation.</p> <ul style="list-style-type: none"> <li>• In an oral administration study with rats (dosages: 75 liver, kidneys.; May cause respiratory irritation. tation, loss of the entire litter time: maximally 8 hr), symptoms such as coma were observed. At necropsy, edema in the lung, necrosis around the hepatic portal vein, turbid swelling in the kidney, etc. were observed. (SIDS)</li> <li>• In an inhalation study with mice (concentrations: 0.42 liver 1 ppm, exposure time: 30 min), transient decrease in the breath rate due to sensory stimulation was observed. (SIDS)</li> <li>• In a whole body exposure study with volunteers for 5 min/day, strong stimulation to the eyes and the nose was observed at 25 ppm. (SIDS)</li> </ul>
Specific target organ toxicity (repeated exposure)	:	<p>Causes damage to organs (liver, kidneys) through prolonged or repeated exposure.</p> <ul style="list-style-type: none"> <li>• In a 13-week oral administration study (mixed in drinking water) with rats, necrosis accompanied by regeneration in the liver was found in the 1000 ppm group. NOAEL was 100 ppm (11.6 – 13.2 mg/kg/day). (SIDS)</li> <li>• In a 5-week inhalation study with rats (concentration: 7 ppm), turbid swelling of hepatocytes, necrosis of renal tubular epithelium, etc. were observed. (SIDS)</li> <li>• In a 14-week oral administration study with rats and mice, hyperplasia of hepatocytes, etc. were observed in the 25 mg/kg/day and higher dose groups. (NTP)</li> </ul>
Aspiration hazard	:	<p>Classification not possible.</p> <ul style="list-style-type: none"> <li>• No information available for the product.</li> </ul>

## 12. Ecological information

### Ecological information of Allyl alcohol

Ecotoxicity	:	<p>Very toxic to aquatic life.</p> <ul style="list-style-type: none"> <li>• Fish (Medaka) LC50(96hr) 0.589mg/L (SIDS)</li> <li>• Fish (Fathead minnow) LC50(96hr) 0.32mg/L (SIDS)</li> <li>• Crustacea (Daphnia magna) EC50(48hr) 2.05mg/L (SIDS)</li> <li>• Algae (Selenastrum) ErC50(72hr) 5.38mg/L, NOEC(72hr) 0.93mg/L (SIDS)</li> </ul>
Persistence and degradability	:	<ul style="list-style-type: none"> <li>• In a 14-day biodegradability test in accordance with Japanese Chemical Substances Control Act (JCSCA), it was determined to be ready biodegradable. (J-CHECK)</li> </ul>
Bioaccumulation	:	<ul style="list-style-type: none"> <li>• BCF = 3.162 (Calculated using the logPow = 0.17) (SIDS)</li> </ul>
Mobility in soil	:	<ul style="list-style-type: none"> <li>• Koc = 1.32 (SIDS)</li> </ul>
Hazardous to the ozone layer	:	<p>Classification not possible.</p> <ul style="list-style-type: none"> <li>• No data available.</li> </ul>

## 13. Disposal considerations

Disposal methods	:	Dispose of contents in accordance with local/regional/national/international regulations.
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Contaminated container and packaging : Avoid release to the environment.  
: Dispose of container in accordance with local/regional/national/international regulations.  
Empty the packaging completely prior to disposal.

## 14. Transport information

### International Regulations

UN-No. : 1098  
Class : 6.1  
Subsidiary risk : 3  
Proper Shipping Name : ALLYL ALCOHOL  
Packing group : I  
Marine pollutant : Yes

## 15. Regulatory information

### Inventory status

Australia	Inventory of Chemical Substances (AICS)	Present
Canada	Domestic Substances List (DSL)	Present
China	Inventory of Existing Chemical Substances (IECSC)	35262
European Union	European Inventory of Existing Commercial Chemical Substances (EINECS)	203-470-7
Japan	Existing and New Chemical Substances (ENCS)	(2)-260
Korea	Existing Chemicals Inventory (KECI/KECL)	KE-29732
New Zealand	Inventory of Chemicals (NZIoC)	HSNO Approval: HSR002896
Philippines	Inventory of Chemicals and Chemical Substances (PICCS)	Present
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Present
United States	Toxic Substances Control Act (TSCA)	Present

Note: When using the product outside Japan, it must be handled in accordance with applied laws and regulations in that country or territory.

## 16. Other information

The statements, contents, figures and other physical and chemical properties are not guaranteed. Hazard assessment, which has been prepared on the basis of documents and other information currently available data, it does not cover all the documents were not so, please use caution when handling.