

# SAFETY DATA SHEET

## NZ TULIP LTD

**Product name:** Telone™ C-35 Soil Fumigant

**Issue Date:** 17.02.2021

**Print Date:** 10.05.2021

NZ Tulip Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name:** Telone™ C-35 Soil Fumigant

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use fumigant.

**COMPANY IDENTIFICATION**

NZ TULIP LTD

A Subsidiary of The Dow Chemical Company

Level 8

7 City Road

Grafton, Auckland 1010, New Zealand

**Customer Information Number:**

(86) 21 3851 4988

SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 0800 658 158

**Local Emergency Contact:** 0800 504 567

**For medical advice, contact the New Zealand Poisons Information Centre:** 0800 POISON (0800 764766)

**Transport Emergency Only Dial** 111

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## 2. HAZARDS IDENTIFICATION

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**GHS Classification**

NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Notice 2017, and the Hazardous Substances (Classification) Notice 2017. Refer to Section 15 for HSNO Approval Number.

3.1: Flammable Liquids - Category B

6.1: Acute toxicity - Category C - Oral

6.1: Acute toxicity - Category A - Inhalation

6.1: Acute toxicity - Category C - Dermal

8.2: Skin corrosion - Category C

8.3: Serious eye damage - Category A

6.5: Respiratory sensitisation - Category A

6.5: Skin sensitisation - Category B

6.6: Germ cell mutagenicity - Category B

6.7: Carcinogenicity - Category B

6.9: Specific Target Organ Toxicity - Category A - Inhalation

9.1: Aquatic toxicity (Acute or Chronic) - Category A

9.2: Ecotoxic to soil environment - Category B

9.3: Ecotoxic to terrestrial vertebrates - Category A

### **GHS label elements**

#### **Hazard pictograms**



Signal word: **DANGER!**

#### **Hazard statements**

Flammable liquid and vapour.

Toxic if swallowed.

Toxic in contact with skin.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Fatal if inhaled.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of causing genetic defects.

Suspected of causing cancer.

Causes damage to organs if inhaled.

Very toxic to aquatic life with long lasting effects.

Toxic to the soil environment.

Very toxic to terrestrial vertebrates.

#### **Precautionary statements**

##### **Prevention**

Use only outdoors or in a well-ventilated area.

Do not eat, drink or smoke when using this product.

Avoid release to the environment.

Wear protective gloves/ eye protection/ face protection.

Use personal protective equipment as required.

##### **Response**

IF exposed or concerned: Get medical advice/ attention.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

Rinse mouth.

Do NOT induce vomiting.

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

##### **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 an approved waste disposal plant.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
1,3-Dichloropropene	542-75-6	63.4%
Chloropicrin	76-06-2	34.7%
Balance	Not available	1.9%

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**4. FIRST AID MEASURES**

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**Description of first aid measures****General advice:**

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

**Most important symptoms and effects, both acute and delayed:**

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. If methemoglobin >10-20% consider methylene blue 1-2 mg/kg body weight as 1% solution intravenously over 5 minutes followed by 15-30 cc flush (Price D, Methemoglobinemia, Goldfrank Toxicologic Emergencies, 5th ed., 1994). Also provide 100% oxygen. Administer 100% oxygen to relieve headache and a general sense of weakness. Determine methemoglobin concentration of blood every 3 to 6 hours for first 24 hours. It should return to normal within 24 hours. The treatment of toxic methemoglobinemia may include the intravenous administration of methylene blue. Material may cause severe pulmonary edema. For persons receiving significant exposure to this material, consider chest x-ray and keep under observation for 48 - 72 hr. for delayed onset of pulmonary edema. Humidified oxygen, intermittent positive pressure breathing, assisted respiration (CPAP) and steroid therapy should be considered in treatment. Physical exertion may potentiate exposure effects during the first 24-72 hours. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns and/or ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal or esophageal control if lavage is done. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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**5. FIREFIGHTING MEASURES**

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**Hazchem Code**

2WE

**Extinguishing media**

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. Water fog, applied gently may be used as a blanket for fire extinguishment. Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

**Unsuitable extinguishing media:** Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Hydrogen chloride. Carbon monoxide. Carbon dioxide. Nitrogen oxides.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Electrically ground and bond all equipment. Flammable mixtures of this product are

readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Flammable mixtures may exist within the vapor space of containers at room temperature. When product is stored in closed containers, a flammable atmosphere can develop.

### Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, see Section 8 of the safety data sheet.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

**Methods and materials for containment and cleaning up:** Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Keep out of reach of children. Keep away from heat, sparks and flame. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Do not swallow. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Do not store in: Zinc. Aluminum. Aluminum alloys. Magnesium. Magnesium alloys. Store in a dry place. Store in original container. Keep container tightly closed. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
1,3-Dichloropropene	ACGIH	TWA	1 ppm
	Further information: A3: Confirmed animal carcinogen with unknown relevance to humans; Skin: Danger of cutaneous absorption		
	NZ OEL	WES-TWA	4.5 mg/m3 1 ppm
	Further information: Skin: Skin absorption		
Chloropicrin	ACGIH	TWA	0.1 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	NZ OEL	WES-TWA	0.67 mg/m3 0.1 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

### Individual protection measures

**Eye/face protection:** Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

#### Skin protection

**Hand protection:** Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of

preferred glove barrier materials include: Ethyl vinyl alcohol laminate ("EVAL"). Viton. Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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 AS/NZS 2161.10) 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 AS/NZS 2161.10) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

**Other Information:** Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:  
AS/NZS 1336: Eye and face protection – Guidelines.  
AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.  
AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.  
AS/NZS 2161: Occupational protective gloves.  
AS/NZS 2210: Occupational protective footwear.  
AS/NZS 4501: Occupational protective clothing Set

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

Physical state	liquid
Color	Yellow
Odor	pungent
Odor Threshold	No test data available
pH	6.9 1% pH Electrode 1% aqueous solution.
Melting point/range	Not applicable
Freezing point	-85 °C
Boiling point (760 mmHg)	93 °C
Flash point	27 °C Pensky-Martens Closed Cup ASTM D 93

<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	No
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapor Pressure</b>	No test data available
<b>Relative Vapor Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.34 at 20 °C / 4 °C <i>EC Method A3</i>
<b>Water solubility</b>	soluble
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	310 °C at 752 mmHg <i>92/69/EEC A15 Ramped Temperature</i>
<b>Decomposition temperature</b>	No data available
<b>Dynamic Viscosity</b>	0.690 mPa.s at 40 °C <i>OECD 114</i>
<b>Kinematic Viscosity</b>	0.515 mm <sup>2</sup> /s at 40 °C <i>OECD 114</i>
<b>Explosive properties</b>	No <i>EEC A14</i>
<b>Oxidizing properties</b>	No
<b>Molecular weight</b>	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Unstable at elevated temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid static discharge.

**Incompatible materials:** Avoid contact with: Acids. Bases. Oxidizers. Avoid contact with metals such as: Zinc. Cadmium. Magnesium. Aluminum. Aluminum alloys.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Toxic gases are released during decomposition. Decomposition products can include trace amounts of: Phosgene.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*



**Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)****Acute oral toxicity**

Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

As product:

LD50, Rat, male and female, 238 mg/kg OECD 401 or equivalent

As product:

LD50, Rat, male, 145 mg/kg

**Information for components:****1,3-Dichloropropene**

Single dose oral LD50 has not been determined. LD50,

For similar material(s): LD50, Rat, 110 mg/kg

**Chloropicrin**

In animals, effects have been reported on the following organs: Liver. LD50, Rat, male, 250 mg/kg

**Balance**

Single dose oral LD50 has not been determined.

**Acute dermal toxicity**

Prolonged or widespread skin contact may result in absorption of harmful amounts.

As product:

LD50, Rabbit, male, 907 mg/kg

**Information for components:****1,3-Dichloropropene**

The dermal LD50 has not been determined.

For similar material(s): LD50, Rabbit, 333 mg/kg

For similar material(s): LD50, Rat, 1,200 mg/kg

**Chloropicrin**

LD50, Rabbit, 62 mg/kg

**Balance**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

Initial symptoms due to low-level exposure may not seem severe but death may ensue due to delayed effects of lung injury and/or infection. Brief exposure (minutes) to easily attainable concentrations may cause serious adverse effects, even death. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. May cause severe pulmonary edema (fluid in the lungs). Excessive exposure may cause lung injury.

Effects may be delayed. May cause methemoglobinemia, thereby impairing the blood's ability to transport oxygen. May cause central nervous system effects. May cause nausea and vomiting.

As product:

LC50, Rat, 4 Hour, vapour, 0.206 mg/l

**Information for components:**

**1,3-Dichloropropene**

The LC50 has not been determined.

For similar material(s): LC50, Rat, 4 Hour, vapour, 2.7 - 3.07 mg/l

**Chloropicrin**

LC50, Rat, male, 4 Hour, vapour, 6 ppm

LC50, Rat, male, 4 Hour, vapour, 0.04 mg/l

**Balance**

The LC50 has not been determined.

**Skin corrosion/irritation**

Based on product testing:

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Vapor may cause skin irritation.

May cause more severe response if skin is abraded (scratched or cut).

Classified as corrosive to the skin according to DOT guidelines.

**Information for components:**

**1,3-Dichloropropene**

For similar material(s):

Brief contact may cause moderate skin irritation with local redness.

May cause drying and flaking of the skin.

**Chloropicrin**

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Vapor may cause skin irritation.

May cause more severe response if skin is abraded (scratched or cut).

Classified as corrosive to the skin according to DOT guidelines.

**Serious eye damage/eye irritation**

Based on product testing:

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Vapor may cause lacrimation (tears).

Vapor may cause eye irritation experienced as mild discomfort and redness.

**Information for components:**

**1,3-Dichloropropene**

For similar material(s):

May cause severe eye irritation.  
May cause slight corneal injury.  
Vapor may cause lacrimation (tears).  
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Chloropicrin**

May cause pain disproportionate to the level of irritation to eye tissues.  
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.  
Vapors cause lacrimation, and painful irritation of the eyes at 1 ppm or less; a concentration of 15 ppm for longer than 1 minutes is intolerable to humans because of the intense irritation produced.

**Sensitization**

For skin sensitization:  
Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:  
No relevant data found.

**Information for components:**

**1,3-Dichloropropene**

Animal data indicate that 1,3-dichloropropene is a potential skin sensitizer.

For respiratory sensitization:  
No relevant data found.

**Chloropicrin**

For skin sensitization:  
No relevant data found.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory Tract

**Information for components:**

**1,3-Dichloropropene**

May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory Tract

**Chloropicrin**

May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory Tract

**Aspiration Hazard**

May be fatal if swallowed and enters airways.

**Information for components:**

**1,3-Dichloropropene**

Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

**Chloropicrin**

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

**Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)**

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

In animals, effects have been reported on the following organs:

Bladder.

Liver.

Lung.

Gastrointestinal tract.

Respiratory tract.

Nasal tissue.

Blood-forming organs (Bone marrow & Spleen).

**Information for components:**

**1,3-Dichloropropene**

For similar material(s):

In animals, effects have been reported on the following organs:

Bladder.

Liver.

Lung.

Gastrointestinal tract.

Respiratory tract.

Nasal tissue.

Blood-forming organs (Bone marrow & Spleen).

**Chloropicrin**

In animals, effects have been reported on the following organs:

Gastrointestinal tract.

Respiratory tract.

**Carcinogenicity**

For the active ingredient(s): Has been shown to cause cancer in laboratory animals by the oral route. Inhalation exposure resulted in an increase in the normal occurrence of benign lung tumors in male mice.

**Information for components:**

**1,3-Dichloropropene**

For similar material(s): Has been shown to cause cancer in laboratory animals by the oral route. Inhalation exposure resulted in an increase in the normal occurrence of benign lung tumors in male mice.

**Chloropicrin**

Available data are inadequate to evaluate carcinogenicity.

**Teratogenicity**

For the active ingredient(s): Chloropicrin. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

For the active ingredient(s): 1,3-Dichloropropene. Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**Information for components:****1,3-Dichloropropene**

For similar material(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**Chloropicrin**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

For the active ingredient(s): In animal studies, did not interfere with reproduction.

**Information for components:****1,3-Dichloropropene**

For similar material(s): In animal studies, did not interfere with reproduction.

**Chloropicrin**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

For the active ingredient(s): Chloropicrin. Has been shown to have mutagenic activity in bacteria. Animal genetic toxicity studies were inconclusive

For the active ingredient(s): 1,3-Dichloropropene. In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

**Information for components:****1,3-Dichloropropene**

For similar material(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

**Chloropicrin**

In vitro genetic toxicity studies were positive. Animal genetic toxicity studies were inconclusive

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**Ecotoxicity****Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Cyprinus carpio (Carp), static test, 96 Hour, 0.53 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.73 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 0.0035 mg/l, OECD Test Guideline 201 or Equivalent

EbC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 0.00033 mg/l

**Persistence and degradability****1,3-Dichloropropene**

**Biodegradability:** Biodegradation may occur under aerobic conditions (in the presence of oxygen).

10-day Window: Fail For similar material(s):

**Biodegradation:** 4.9 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Theoretical Oxygen Demand:** 1.281 mg/mg

**Biological oxygen demand (BOD)**

Incubation Time	BOD
	0.148 mg/mg

**Stability in Water (1/2-life)**

Based on data from similar materials, Hydrolysis, half-life, 2.3 - 4.75 d

**Chloropicrin**

**Biodegradability:** Biodegradation may occur under both aerobic and anaerobic conditions (in the presence or absence of oxygen).

**Theoretical Oxygen Demand:** 0.10 mg/mg

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential****1,3-Dichloropropene**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 1.82 - 2.1 Measured

**Chloropicrin**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 2.09 Measured

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in Soil****1,3-Dichloropropene**

**Partition coefficient (Koc):** 44.7 Measured

**Chloropicrin**

**Partition coefficient (Koc):** 36 - 62 Estimated.

**Balance**

No relevant data found.

**Results of PBT and vPvB assessment****1,3-Dichloropropene**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Chloropicrin**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Balance**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**Other adverse effects****1,3-Dichloropropene**

1,3-Dichloropropene has a stratospheric ozone depletion potential (ODP) of 0.002, relative to CFC 12 (ODP=1).

**Chloropicrin**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Balance**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** NOTICE: Research sample for use by qualified personnel only. Upon completion of tests, dispose of material and container safely and in accord with federal, state/provincial and local laws and regulations. If further information is needed on disposal or use, consult your supplier.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Notice 2017. Additional local requirements may be applicable in

accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

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## 14. TRANSPORT INFORMATION

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### Classification for ROAD and Rail transport:

Proper shipping name	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S.(Chloropicrin, 1,3-Dichloropropene)
UN number	UN 3489
Class	6.1 (3, 8)
Packing group	I
Environmental hazards	1,3-Dichloropropene, Chloropicrin

### Classification for SEA transport (IMO-IMDG):

Proper shipping name	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S.(Chloropicrin, 1,3-Dichloropropene)
UN number	UN 3489
Class	6.1 (3, 8)
Packing group	I
Marine pollutant	1,3-Dichloropropene, Chloropicrin
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

### Classification for AIR transport (IATA/ICAO):

Transport forbidden by regulation

### Hazchem Code

2WE

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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### New Zealand. Inventory of Chemical Substances

The hazardous components of this product are listed in the New Zealand Inventory of Chemicals (NZIoC) or the product otherwise complies with the requirements of the Hazardous Substances and New Organisms (HSNO) Act 1996.

### ACVMG Approval Number

No. P5701



See [www.foodsafety.govt.nz](http://www.foodsafety.govt.nz) for registration conditions.

### HSNO Approval

Liquid containing 615 g/kg 1,3-dichloropropene and 345 g/kg chloropicrin

HSNO Approval Number: HSR001640

### HSNO Controls

Certified handler certificate required.

Tracking hazardous substance is required.

Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

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## 16. OTHER INFORMATION

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### Revision

Identification Number: 99183276 / 3000 / Issue Date: 17.02.2021 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

### Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
NZ OEL	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
TWA	8-hour, time-weighted average
WES-TWA	Workplace Exposure Standard - Time Weighted average

### Full text of other abbreviations

AIIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature;

SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

NZ TULIP LTD urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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