

# Material Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** TRICHLOROETHYLENE

**Other name(s):** Trineu; Acetylene trichloride; Trilene; Tri stabilised; TCE stabilised; Trichloroethene; Triklone.

**Recommended Use:** Industrial solvent and metal degreasing agent.

**Supplier:** Orica New Zealand Limited  
**Street Address:** Orica Chemnet House  
Level four, 123 Carlton Gore Road  
Newmarket, Auckland  
New Zealand  
**Telephone Number:** +64 9 368 2700  
**Facsimile:** +64 9 368 2710  
**Emergency Telephone:** 0 800 734 607 (ALL HOURS)

## 2. HAZARDS IDENTIFICATION

Classified as a Dangerous Good according to NZS 5433:1999 Transport of Dangerous Goods on Land.

Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

**Subclasses:** Subclass 6.1 Category D - Substances which are acutely toxic.  
Subclass 6.3 Category A - Substances that are irritating to the skin.  
Subclass 6.4 Category A - Substances that are irritating to the eye.  
Subclass 6.6B Category III - Substances which cause concern for humans owing to possible mutagenic effects.  
Subclass 6.7 Category A - Substances that are known or presumed human carcinogens.  
Subclass 6.9 Category B - Substances that are harmful to human target organs or systems.  
Subclass 9.1 Category D - Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components / CAS Number	Proportion	Risk Phrases
Trichloroethylene 79-01-6	>99%	R36/38, Carc. Cat.2 R45, R52/53, R67, Muta. Cat.3 R68

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (Phone eg. Australia 131 126; New Zealand 0 800 764766) or a doctor.

**Inhalation:** Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm.

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Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

**Skin Contact:** If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

**Eye Contact:** If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

**Ingestion:** Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

**Medical attention and special treatment:** Treat symptomatically. Adrenaline and similar sympathomimetic drugs should be avoided following exposure as cardiac arrhythmia may result with possible subsequent cardiac arrest. Gastric lavage may be effective within 4 hours of ingestion. Following ingestion adsorbants such as activated carbon may be of value.

## 5. FIRE FIGHTING MEASURES

**Hazards from combustion products:** Vapour concentrations of 12.5%-90% v/v between 30°C and 82°C may ignite if in contact with high temperature heat sources. Vapour may ignite above 25.5°C if mixed with pure oxygen (10.3%-64.5% v/v). Certain mixtures in air can ignite with high intensity sources of heat, such as welding arcs, sparks and flames or at high temperatures and pressures. Welding or cutting should not be carried out on any vessel likely to contain solvent.

**Precautions for fire fighters and special protective equipment:** Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Decomposes on heating emitting toxic fumes, including those of hydrogen chloride and phosgene. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

**Suitable Extinguishing Media:** Not combustible, however, if material is involved in a fire use: Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

**Hazchem Code:** 2Z

## 6. ACCIDENTAL RELEASE MEASURES

**Emergency procedures:** Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

**Methods and materials for containment and clean up:** Work up wind or increase ventilation. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled

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containers or drums for disposal.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Avoid skin and eye contact and breathing in vapour, mists and aerosols.

**Conditions for safe storage:** Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Trichloroethylene: WES-TWA 50 ppm, 269 mg/m<sup>3</sup>; WES-STEL 200 ppm, 1,070 mg/m<sup>3</sup>

As published by the New Zealand Occupational Safety and Health Service (OSH).

WES - TWA (Workplace Exposure Standard - Time Weighted Average) - The eight-hour, time-weighted average exposure standard is designed to protect the worker from the effects of long-term exposure.

WES - STEL (Workplace Exposure Standard - Short Term Exposure Limits) - The 15 minute average exposure standard. Applies to any 15 minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both short-term and eight-hour, time-weighted average exposures should be determined.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

### Engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

### Personal Protective Equipment:

Orica Personal Protection Guide No. 1, 1998: H - OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If risk of inhalation exists, wear organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Physical state:** Clear Liquid  
**Colour:** Colourless  
**Odour:** Chloroform - like  
**Molecular Formula:** Cl<sub>2</sub>C=CHCl  
**Solubility:** Slightly soluble in water.  
**Specific Gravity:** 1.465  
**Relative Vapour Density (air=1):** 4.54  
**Vapour Pressure (20 °C):** 7.87 kPa  
**Flash Point (°C):** None  
**Flammability Limits (%):** 12.5-90  
**Autoignition Temperature (°C):** 410  
**Solubility in water (g/L):** 1.07  
**Boiling Point/Range (°C):** 86-88  
**pH:** Not available

**Freezing Point/Range (°C):** -87

## 10. STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions to avoid:** Avoid contact with foodstuffs.

**Incompatible materials:** Incompatible with alkalis , and hot metals .

**Hazardous decomposition products:** Hydrogen chloride. Phosgene.

**Hazardous reactions:** Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Ingestion:** Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkenness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs.

**Eye contact:** An eye irritant.

**Skin contact:** Contact with skin will result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis.

**Inhalation:** Material may be irritant to the mucous membranes of the respiratory tract (airways). Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired

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judgement and if exposure is prolonged, unconsciousness. Breathing in high concentrations may result in an irregular heart beat and prove suddenly fatal.

## Long Term Effects:

Possible risk of irreversible effects. May cause cancer.

## Toxicological Data:

Oral LD50 (rat): 4920 mg/kg.  
Oral LD50 (mice): 2402 mg/kg.  
SKIN: Irritant (rabbit).  
EYES: Irritant (rabbit).

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Avoid contaminating sewers or drains.

### Aquatic toxicity:

Harmful to aquatic organisms. May cause long term adverse effects in the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Refer to Waste Management Authority. Material can be recycled. Dispose of material through a licensed waste contractor.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

Classified as a Dangerous Good according to NZS 5433:1999 Transport of Dangerous Goods on Land.

**UN No:** 1710  
**Class-primary** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** TRICHLOROETHYLENE  
**Hazchem Code:** 2Z

### Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

**UN No:** 1710  
**Class-primary:** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** TRICHLOROETHYLENE

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## Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN No:** 1710  
**Class-primary:** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** TRICHLOROETHYLENE

## 15. REGULATORY INFORMATION

**Classification:** Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

**Subclasses:** Subclass 6.1 Category D - Substances which are acutely toxic.  
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## 16. OTHER INFORMATION

'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2005.

This material safety data sheet has been prepared by SH&E Shared Services, Orica.

### **Reason(s) for Issue:**

Change in Exposure Controls

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Orica Limited cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Orica representative or Orica Limited at the contact details on page 1.

Orica Limited's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

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