

Section 1 - Identification of Chemical Product and Company

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Substance: Perchloroethylene is a chlorinated hydrocarbon. It is presented as an aerosol.
Trade Name: **INOX-mx11 Chain & Brake Clean**
Product Use: Chain, brake & parts degreaser/cleaner.
Revision Date: **June 2008**

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: T, Toxic. N, Dangerous to the environment. Hazardous according to the criteria of ASCC. Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R22, R45, R66, R68, R51/53. Harmful if swallowed. May cause cancer. Repeated exposure may cause skin dryness or cracking. Possible risk of irreversible effects. Toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S20, S23, S61, S20/21, S24/25, S36/37. When using, do not eat or drink. Do not breathe vapours. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. When using, do not eat, drink or smoke. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

SUSDP Classification: S6

ADG Classification: Class 2.1, (AEROSOLS)

UN Number: 1950

Emergency Overview

Physical Description & Colour: Clear, colourless liquid.

Odour: Ether-like odour

Major Health Hazards: May cause cancer, harmful if swallowed.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort. Intentional misuse by deliberately concentrating and inhaling contents of aerosol containers can be harmful or fatal.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Major health effect from this product is misuse of the aerosol function. If sprayed continuously on skin or in eyes, it can cause frostbite.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: Available data shows that this product is not harmful. If sprayed directly in the eye, this product will irritate. If spraying is prolonged, it may cause damage through frostbite.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. However, this product is believed to be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

ASCC: Perchloroethylene is classified by ASCC as a Class 3 Carcinogen, possibly carcinogenic to humans. See the ASCC website for further details. A web address has not been provided as addresses frequently change.

NTP: Perchloroethylene is classified by NTP as reasonably anticipated to be carcinogenic to humans. See the NTP website for further details. A web address has not been provided as addresses frequently change.

IARC: Perchloroethylene is classed 2a by IARC - probably carcinogenic to humans. See the IARC website for further details. A web address has not been provided as addresses frequently change.

Poisons Information Centre: 13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Perchloroethylene	127-18-4	> 60	340	1020
Alkanes, C ₃₋₄	68475-59-2	10 - 60	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The ASCC TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

Eye Contact: No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires. Aim to dilute the material with large quantities of water. If practical, contain diluted material and prevent from entering drains and water courses.

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Flash point: Not available. Propellant is flammable; perchloroethylene is not.

Upper Flammability Limit: Not available

Lower Flammability Limit: Not available

Autoignition temperature: No data.

Flammability Class: No data.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include Viton, Nitrile. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type A cartridge, suitable for organic vapours.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Take suitable precautions eg. use of non-sparking equipment to avoid creating sparks or flames which may ignite the spilled material. Leaking gases may form an explosion hazard. Any equipment capable of building an electrostatic charge should be electrically grounded. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers and valves periodically for leaks. If you keep more than 25kg of flammable gases, you are probably required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

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Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

ASCC Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
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Perchloroethylene	340	1020
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No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: Viton, nitrile.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Safety deluge showers should, if practical, be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, colourless liquid.
Odour:	Ether-like odour
Boiling Point:	121°C at 100kPa (Perchloroethylene)
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	Completely volatile at 100°C.
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	1.62 at 22°C (Perchloroethylene)
Water Solubility:	Negligible.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: Slowly corrodes aluminium, iron and zinc.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Keep containers and surrounding areas well ventilated. Keep away from sources of sparks or ignition.

Incompatibilities: Strong acids, strong oxidizers, strong alkalis, especially NaOH, KOH; finely divided metals, especially zinc, barium, lithium..

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

The major route of absorption of Perchloroethylene (PCE) is through the Lung: 80% to 90% of inhaled vapour is absorbed. Skin exposure can appreciably increase absorption. For example, immersion of one thumb in PCE gives an exposure equivalent to breathing about 10 ppm. Additionally, exercising while exposed increases uptake by 50% to 300% or more as compared to a resting state.

The excretion of PCE is mostly (80-98%) through exhalation of the unchanged compound through the lung. About 2% of an absorbed dose is metabolized to trichloroacetic acid (TCA), which is excreted in the urine. TCA, because of its binding to serum albumin, can be detected in the blood or urine for a fairly long time, and has a half-life of about three days. It is important to note that the metabolism of PCE to trichloroacetic acid is inhibited by ethanol use; thus, a low TCA level cannot be used to assure safe exposure levels of PCE if the victim also uses alcohol.

The half-life of PCE in the blood is not simply determined. Initially, within a few hours of typical occupational exposure, the concentration of PCE measured in blood or expired air drops rapidly, with a half-life of just a few hours. However, one or two days after exposure has ceased, the decline of PCE levels measured in the same way becomes much slower, with a half-life approaching 3 days.

There is more fat storage of PCE than other chlorinated solvents such as trichloroethylene or methyl chloroform. This may be responsible for its complex exertion behaviour. Due to this fat storage, repeated exposures generally give rise to higher blood levels of PCE as measured a few days after exposure, than do single exposures.

Perchloroethylene has been shown to increase the rate of spontaneously occurring malignant tumours in certain laboratory rats and mice. Other long-term inhalation studies in rats failed to show tumourigenic response. Epidemiology studies are limited and have not established an association between perchloroethylene exposure and cancer. Perchloroethylene is not believed to pose a measurable carcinogenic risk to man when handled as recommended.

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Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the foetus. Did not cause birth defects in animals, other effects were seen in the foetus only at doses which caused toxic effects to the mother.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Perchloroethylene	Conc>=1%: Xn; R40

Section 12 - Ecological Information

Toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. Chlorinated solvents have a relatively short life-time in the atmosphere. Perchloroethylene and trichloroethylene display very slow biodegradation and responsible end-users will be very careful to avoid spillages.

Section 13 - Disposal Considerations

Disposal: There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. This product 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. If neither of these options is suitable, consider controlled incineration, or landfill.

Section 14 - Transport Information

ADG Code: 1950, AEROSOLS

Hazchem Code: 2RE

Special Provisions: SP63, SP190, SP229, SP227

Dangerous Goods Class: Class 2.1, Flammable gases.

Packaging Group: Not set

Packaging Method: No packaging methods specified.

Class 2.1 Flammable gases shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids) (where both flammable liquids and flammable gases are in bulk), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.2 (Non-flammable Non-Toxic gases), 3 (Flammable liquids except where both flammable liquids and flammable gases are in bulk), 6 (Toxic Substances), 8 (Corrosive Substances) 9 (Miscellaneous dangerous goods), Foodstuffs and foodstuff empties.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Perchloroethylene, is mentioned in the SUSDP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Cod	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
ASCC	Office of the Australian Safety and Compensation Council
CAS Number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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