

## Section 1 - Identification of The Material and Supplier



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Quality  
ISO 9001  
SAI GLOBAL  
Licence No. 6248

**Chemical nature:** Chlorinated hydrocarbon; stabiliser is added.  
**Trade Name:** **Methylene Chloride - UG**  
**Product Use:** Solvent.  
**Creation Date:** **August, 2007**  
**This version issued:** **July, 2010** and is valid for 5 years from this date.

## SECTION 2 - HAZARDS IDENTIFICATION

### Statement of Hazardous Nature

This product is classified as: Xn, Harmful. Xi, Irritating. Hazardous according to the criteria of SWA.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** R20, R40, R66, R36/38. Harmful by inhalation. Limited evidence of a carcinogenic effect. Repeated exposure may cause skin dryness or cracking. Irritating to eyes and skin.

**Safety Phrases:** S23, S24/25, S36/37. Do not breathe vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

**SUSDP Classification:** S5

**ADG Classification:** Class 6.1: Toxic substances.

**UN Number:** 1593, DICHLOROMETHANE

### Emergency Overview

**Physical Description & colour:** Clear, colourless liquid.

**Odour:** Sharp, penetrating odour.

**Major Health Hazards:** limited evidence of a carcinogenic effect, irritating to eyes and skin, harmful if inhaled, repeated exposure may cause skin dryness or cracking.

### Potential Health Effects

Repeated exposure to high concentrations may produce adverse effects on the liver and kidney. Studies in some animals have shown methylene chloride to be carcinogenic. These effects are species specific and are of no relevance to human health. For human carcinogenicity studies, IARC states "For no type of cancer was there a sufficiently consistent elevation of risk across studies to make a causal interpretation credible."

#### Inhalation:

**Short term exposure:** Harmful by inhalation. Continued or high exposures by inhalation will cause anaesthetic effects. This may result in a loss of consciousness and could prove fatal. Methylene chloride is converted to carbon monoxide in the body, which reduces the oxygen carrying capacity of the blood.

#### Skin Contact:

**Short term exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. However product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

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

#### Eye Contact:

**Short term exposure:** This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms

# MATERIAL SAFETY DATA SHEET

This revision issued: July, 2010

should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

**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. This product, while believed to be not harmful, is likely to cause headache and gastric disturbance such as nausea and vomiting if ingested in significant quantities. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

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

## Carcinogen Status:

**SWA:** Dichloromethane is classified by SWA as a Class 3 Carcinogen, possibly carcinogenic to humans.

1,2-butylene Oxide is classified by SWA as a Class 3 Carcinogen, possibly carcinogenic to humans.

See the SWA website for further details. A web address has not been provided as addresses frequently change.

**NTP:** Dichloromethane 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:** Dichloromethane is classed 2b IARC - possibly carcinogenic to humans.

1,2-butylene Oxide is classed 2b IARC - possibly carcinogenic to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Dichloromethane	75-09-2	>99	174	not set
1,2-butylene oxide	106-88-7	<1	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 SWA 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:** If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

**Skin Contact:** Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

**Eye Contact:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

## SECTION 5 - FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** Explosive mixtures of methylene chloride and air can be formed, but are difficult to ignite and require high intensity sources of heat, such as welding arcs, sparks and flames or high temperatures and pressures; addition of small amounts of flammable substances to methylene chloride (such as flammable liquids or gases) and / or an increase in the oxygen content of the local atmosphere, may strongly enhance these effects. Welding or cutting should not be carried out on any vessel likely to contain solvent because of the risk of explosion. Thermal decomposition will evolve toxic and corrosive vapours of hydrogen chloride and phosgene. Containers may burst if overheated due to thermal expansion of the contents.

# MATERIAL SAFETY DATA SHEET

**Extinguishing Media:** Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

**Flash point:** Non combustible.

**Upper Flammability Limit:** 19.5% at 25°C

**Lower Flammability Limit:** 18.8% at 25°C

**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. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include Nitrile, butyl rubber. 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 AX cartridge, suitable for low boiling point organic compounds. See manufacturer's specifications for detailed specifications.

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. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. 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. Do not mix with nitric acid because detonable mixtures may be formed. Avoid contact with naked flames and hot surfaces as toxic and corrosive decomposition products (hydrogen chloride) can be formed. The vapour is heavier than air and may reach dangerously high concentrations in pits, tanks, and other confined spaces. In such cases provide adequate ventilation or wear suitable respiratory protective equipment with positive air supply. When using do not smoke.

**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, away from direct sunlight. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Do not use aluminium or its alloys in the construction of storage vessels, pipework and ancillary equipment, including internal components e.g. pump impellers. Due to the risk of explosion DO NOT weld, cut or burn drums or other vessels which contain or have contained methylene chloride. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be 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.

## 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**.

SWA Exposure Limits	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Dichloromethane	174	not set

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.

# MATERIAL SAFETY DATA SHEET

**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:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

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

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

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

<b>Physical Description &amp; colour:</b>	Clear, colourless liquid.
<b>Odour:</b>	Sharp, penetrating odour.
<b>Boiling Point:</b>	40°C at 100kPa
<b>Freezing/Melting Point:</b>	-97°C
<b>Volatiles:</b>	Completely volatile at 100°C.
<b>Vapour Pressure:</b>	69.82 kPa at 30°C; 46.86 kPa at 20°C
<b>Vapour Density:</b>	2.93
<b>Specific Gravity:</b>	1.32
<b>Water Solubility:</b>	1.3% at 25°C
<b>pH:</b>	No data.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	Approx 20ppm
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	No data
<b>Autoignition temp:</b>	No data.

## SECTION 10 - STABILITY AND REACTIVITY

**Reactivity:** No significant decomposition products. Prolonged contact with aluminium or light alloys may cause a reaction resulting in the generation of hydrogen chloride gas and heat.

**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. Contact with red hot surfaces, sparks or naked flames may generate toxic and corrosive fumes of hydrogen chloride and phosgene. Forms a detonatable mixture with nitric acid.

**Incompatibilities:** May react with certain amines, e.g. polyurethane catalysts. Prolonged contact with aluminium or light alloys may cause a reaction resulting in the generation of hydrogen chloride gas and heat.

**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

**Inhalation:** Harmful by inhalation. High concentrations of vapour may be irritant to the respiratory tract. High atmospheric concentrations will lead to anaesthetic effects and adverse effects on the central nervous system. Symptoms may include light-headedness, nausea, vomiting and headache. Exposure to concentrations of 1000 ppm methylene chloride for 20 minutes causes light-headedness. Very high concentrations may result in a loss of consciousness. Very high exposures may cause an abnormal heart rhythm and prove suddenly fatal. Methylene chloride is converted to carbon monoxide in the body, which reduces the oxygen carrying capacity of the blood. This is reflected by a raised carboxy haemoglobin concentration in the blood.

**Skin Contact:** Irritating to skin. Will remove the natural greases resulting in dryness, cracking and dermatitis. Repeated and/or prolonged skin contact may cause reddening, burning and blisters. Can be absorbed through skin but not in sufficient amounts to cause adverse effects.

**Eye Contact:** Moderate irritant. Liquid splashes may result in transient eye damage.

# MATERIAL SAFETY DATA SHEET

**Ingestion:** The swallowing of small splashes is unlikely to cause any adverse effects. Large amounts may produce internal irritation, nausea, vomiting and diarrhoea and can lead to drowsiness and unconsciousness.

**Long Term Exposure:** Repeated exposure to high concentrations may produce adverse effects on the liver and kidney. Chronic inhalation studies in mice have shown increases in lung and liver tumours, when exposed to concentrations of methylene chloride well in excess of the occupational exposure limit. Extensive mechanistic research has shown that these carcinogenic effects are specific to the mouse and are not relevant to human health. This is due to well established differences in metabolic pathways between rodents and man. Several major studies on humans occupationally exposed to methylene chloride have shown no demonstrable link with cancer.

## Classification of Hazardous Ingredients

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

## SECTION 12 - ECOLOGICAL INFORMATION

**Environmental Fate and Distribution:** Liquid with high volatility. Methylene chloride is sparingly soluble in water, partitions into the atmosphere and has low potential for bioaccumulation.

**Persistence and Degradation:** This product does not persist in the atmosphere. It is naturally degraded to hydrogen chloride and carbon dioxide. Atmospheric lifetime is approximately 6 months.

Methylene chloride is slowly biodegradable in water and is slowly biodegradable in soil.

Biodegradability : half-life (bacteria) approximately 18 months. Biodegradability : pseudomonas strain - 0.8g/L/hr.

**Toxicity:** May cause harm to aquatic organisms.

**Effect on Effluent Treatment:** The product is substantially removed in biological treatment processes. There is no evidence of inhibition to the aerobic treatment process at a concentration of 200mg/L.

## 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 separate the contamination in some way. Only if neither of these options is suitable, consider landfill.

## SECTION 14 - TRANSPORT INFORMATION

**ADG Code:** 1593, DICHLOROMETHANE

**Hazchem Code:** 2Z

**Special Provisions:** None allocated

**Limited quantities:** ADG 7 specifies a Limited Quantity value of 5 L for this class of product.

**Dangerous Goods Class:** Class 6.1, Toxic Substances.

**Packaging Group:** III

**Packaging Method:** P001, IBC03, LP01

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

## SECTION 15 - REGULATORY INFORMATION

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredient: Dichloromethane, is mentioned in the SUSDP.

**MATERIAL SAFETY DATA SHEET****SECTION 16 - OTHER INFORMATION**

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

**Acronyms:**

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSDP</b>	Standard for the Uniform Scheduling of Drugs & Poisons
<b>UN Number</b>	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 SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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