

# S-WELD SPATTER GUARD

Chemwatch Independent Material Safety Data Sheet

Issue Date: 31-Oct-2008

NC317TCP

CHEMWATCH 64723

Version No:2.0

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

S-WELD SPATTER GUARD

### SYNONYMS

"release agent", "Callington Haven", "formerly Calguard"

### PROPER SHIPPING NAME

TOXIC LIQUID, ORGANIC, N.O.S.(contains methylene chloride)

### PRODUCT USE

Liquid release agent to prevent weld spatter from adhering to metal.

### SUPPLIER

Company: Callington Haven Pty Ltd

Address:

30 South Street

Rydalmere

NSW, 2116

AUS

Telephone: +61 2 9898 2788

Emergency Tel: 1800 039 008 (24 hours)

Emergency Tel: +61 3 9573 3112

Fax: +61 2 9684 4215

Email: sales@calhaven.com.au

## Section 2 - HAZARDS IDENTIFICATION

### STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

### CHEMWATCH HAZARD RATINGS



SCALE:

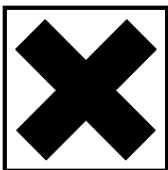
Min/Nil=0

Low=1

Moderate=2

High=3

Extreme=4



POISONS SCHEDULE

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Section 2 - HAZARDS IDENTIFICATION

## RISK

- Harmful if swallowed.
  - Irritating to skin.
  - Limited evidence of a carcinogenic effect.
  - Inhalation and/or skin contact may produce health damage\*.
  - Cumulative effects may result following exposure\*.
  - May produce discomfort of the eyes and respiratory tract\*.
  - May affect fertility\*.
  - Repeated exposure potentially causes skin dryness and cracking\*.
  - Vapours potentially cause drowsiness and dizziness\*.
- \* (limited evidence).

## SAFETY

- Do not breathe gas/ fumes/ vapour/ spray.
- Use only in well ventilated areas.
- Keep container in a well ventilated place.
  
- Avoid exposure - obtain special instructions before use.
- To clean the floor and all objects contaminated by this material use water.
- Keep container tightly closed.
  
- Keep away from food drink and animal feeding stuffs.
- In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).
- This material and its container must be disposed of as hazardous waste.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
methylene chloride	75-09-2	>60
performance additives		<30

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.
- Avoid giving milk or oils.
- Avoid giving alcohol.

### EYE

- If this product comes in contact with the eyes:
  - Immediately hold eyelids apart and flush the eye continuously with running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

- If skin contact occurs:
  - Immediately remove all contaminated clothing, including footwear.
  - Flush skin and hair with running water (and soap if available).

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Section 4 - FIRST AID MEASURES

- Seek medical attention in event of irritation.

## INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Protheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

## NOTES TO PHYSICIAN

- Treat symptomatically.

DO NOT administer sympathomimetic drugs as they may cause ventricular arrhythmias.

For acute or short term repeated exposures to methylene chloride:

- Methylene chloride is well absorbed by the lung. An 8 hour exposure to 250 ppm causes carboxyhaemoglobin levels to exceed 8%. Physical exertion and smoke produce an additive effect.
- The lungs exhale most of the absorbed dose unchanged. Between 1/4 and 1/3 is metabolised to carbon monoxide / dioxide. 5 hours of 100% oxygen is required, typically, to reduce the carboxyhaemoglobin level from 13% to 7.5%.
- As with inhalation and ingestion of the hydrocarbons support of respiration and monitoring for dysrhythmias are the first steps toward stabilisation.
- Small ingestions require only dilution with water or milk. Patients who have ingested more than several swallows may benefit from Ipecac Syrup/lavage, charcoal or cathartics. No data is available to support the efficacy of these treatments.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

Determinant	Index	Sampling Time	Comments
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

B: Background levels occur in specimens collected from subjects NOT exposed.

NS: Non-specific determinant; Also seen after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

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Section 5 - FIRE FIGHTING MEASURES

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- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

## FIRE/EXPLOSION HAZARD

- Non flammable liquid.
- However vapour will burn when in contact with high temperature flame.
- Ignition ceases on removal of flame.
- May form a flammable / explosive mixture in an oxygen enriched atmosphere
- Heating may cause expansion/vapourisation with violent rupture of containers
- Decomposes on heating and produces corrosive fumes of hydrochloric acid, carbon monoxide and small amounts of toxic phosgene.

## FIRE INCOMPATIBILITY

- Avoid contact with strong acids, strong alkalis and strong oxidisers.

May react violently with aluminium and magnesium powdered metals and alkali metals e.g. sodium, potassium, lithium.

Dissolves most plastics and synthetic fibres.

## HAZCHEM: 2X

## Personal Protective Equipment

Gas tight chemical resistant suit.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.

Increase ventilation.

No smoking or naked lights within area.

Stop leak if safe to do so.

Contain and absorb spill with sand, earth, inert material or vermiculite.

Collect and seal in labelled drums for disposal.

If contamination of drains or waterways occurs, advise emergency services.

- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

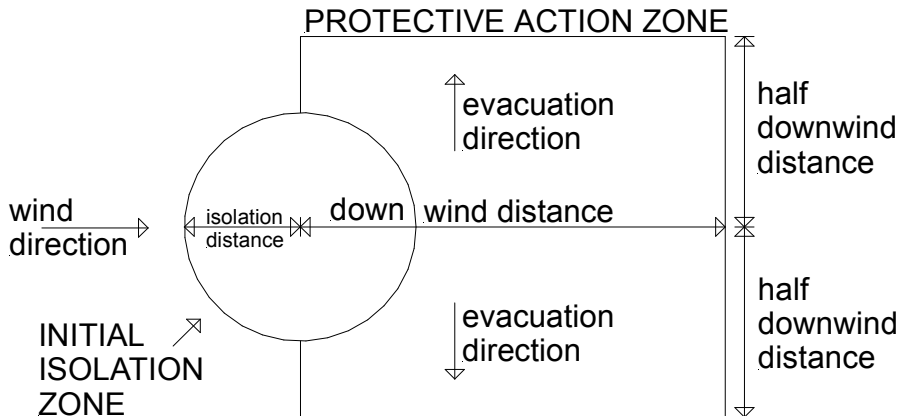
## PROTECTIVE ACTIONS FOR SPILL

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 Section 6 - ACCIDENTAL RELEASE MEASURES



From US Emergency Response Guide 2000  
 Guide 153

## SMALL SPILLS

Name	Isolation Distance	Downwind Day	Protection Night
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A)	700 ft (215 m)	1.2 mile (1.9 km)	2.7 mile (4.3 km)
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B)	200 ft (60 m)	0.2 mile (0.3 km)	0.7 mile (1.1 km)
Toxic liquid, organic, n.o.s. (when Inhalation Hazard is on a package or shipping paper)	700 ft (215 m)	1.2 mile (1.9 km)	2.7 mile (4.3 km)

## LARGE SPILLS

Name	Isolation Distance	Downwind Day	Protection Night
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A)	3000 ft (915 m)	(7.0+ mile (11.0+ km)	(7.0+ mile (11.0+ km)
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B)	600 ft (185 m)	1 mile (1.6 km)	2.5 mile (4 km)
Toxic liquid, organic, n.o.s. (when Inhalation Hazard is on a package or shipping paper)	3000 ft (915 m)	(7.0+ mile (11.0+ km)	(7.0+ mile (11.0+ km)
From IERG (Canada/Australia)			
Isolation Distance	25 metres		
Downwind Protection Distance	250 metres		
IERG Number	36		

## FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-

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Section 6 - ACCIDENTAL RELEASE MEASURES

threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".

LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide 153 is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

## EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

methylene chloride 4000ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

methylene chloride 750ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

methylene chloride 200ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid smoking, naked lights or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Avoid contact with incompatible materials.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Working clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing/handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

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Section 7 - HANDLING AND STORAGE

## SUITABLE CONTAINER

500 gram cans with pump spray.

## STORAGE INCOMPATIBILITY

■ Segregate from strong oxidisers, strong alkalis, aluminium and magnesium powdered metals and alkali metals e.g. sodium, potassium, lithium.

## STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.

## SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: *May be stored together*

O: *May be stored together with specific preventions*

X: *Must not be stored together*

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	Notes
Australia Exposure Standards	methylene chloride (Methylene chloride)	50	174	Sk

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m <sup>3</sup> )	Revised IDLH Value (ppm)
methylene chloride		2,000

### MATERIAL DATA

S-WELD SPATTER GUARD:

- None assigned. Refer to individual constituents.

METHYLENE CHLORIDE:

- For methylene chloride

Odour Threshold Value: 158 ppm (detection), 227 ppm (recognition)

NOTE: Detector tubes for methylene chloride, measuring in excess of 25 ppm are commercially available.

Long-term measurements (4 hrs) may be conducted to detect concentrations exceeding 13 ppm.

Exposure at or below the recommended TLV-TWA (and in the absence of occupational exposure to carbon monoxide) is thought to minimise the potential for liver injury and to provide protection against the possible weak carcinogenic effects which have been demonstrated in laboratory rats and mice. Enhancement of tumours of the lung, liver, salivary glands and mammary tissue in rodent studies has lead NIOSH to recommend a more conservative outcome. The ACGIH however concludes that in the absence of documentation of health-related injuries at higher exposures after a long history of methylene chloride use and a number of

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

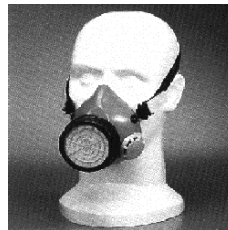
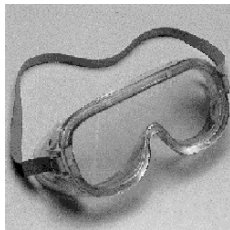
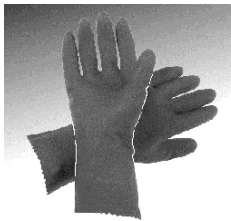
epidemiologic studies, the recommended TLV-TWA provides an adequate margin of safety.

Concentration effects:

Concentration	Clinical effects
>300 ppm	Sweet odour
500-1000 ppm (1-2 h)	Unpleasant odour, slight anaesthetic effects, headache, light-headedness, eye irritation and elevated COHb concentration
2300 ppm (5 min.)	Odour strong, intensely irritating; dizziness
7200 ppm (8-16 min)	Paraesthesia, tachycardia
>50000 ppm	Immediately life-threatening.

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for the reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits. Uncertainty factors (UFs) have also been incorporated.

### PERSONAL PROTECTION



#### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- PVA gloves.
- Polyethylene gloves.
- PVC boots.

#### OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### RESPIRATOR

■ Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	AXNO- AUS	-
1000	50	-	AXNO- AUS
5000	50	Airline *	-
5000	100	-	AXNO- 2
10000	100	-	AXNO- 3
	100+		Airline**

\* - Continuous Flow

\*\* - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

■ Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

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Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

Clear yellow liquid with a penetrating, ether-like odour; dispersible in water.

### PHYSICAL PROPERTIES

Liquid.

Mixes with water.

Molecular Weight: Not applicable

Boiling Range (°C): 39 initial

Melting Range (°C): Not available

Specific Gravity (water=1): 1.25 approx.

Solubility in water (g/L): Miscible

pH (as supplied): Not applicable

pH (1% solution): Not applicable.

Vapour Pressure (kPa): 50.6 @ 22C

Volatile Component (%vol): >60

Evaporation Rate: Not available

Relative Vapour Density (air=1): 2.93

Flash Point (°C): Not applicable.

Lower Explosive Limit (%): Not applicable

Upper Explosive Limit (%): Not applicable

Autoignition Temp (°C): Not available

Decomposition Temp (°C): Not available

State: Liquid

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.

- Presence of heat source and direct sunlight.

Decomposes in the presence of moisture to produce corrosive acid.

Storage in unsealed containers.

Product is considered stable under normal handling conditions.

Hazardous polymerisation will not occur.

*For incompatible materials - refer to Section 7 - Handling and Storage.*

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

- The liquid is highly discomforting and toxic if swallowed.

Ingestion may result in nausea, abdominal irritation, pain and vomiting.

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Section 11 - TOXICOLOGICAL INFORMATION

Considered an unlikely route of entry in commercial/industrial environments.

## EYE

■ The liquid is highly discomforting to the eyes and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.

The vapour is discomforting to the eyes.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

## SKIN

■ The liquid is discomforting to the skin and may cause drying of the skin, which may lead to dermatitis.

Toxic effects may result from skin absorption.

Bare unprotected skin should not be exposed to this material. The material may accentuate any pre-existing skin condition.

The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

## INHALED

■ The vapour/mist is discomforting to the upper respiratory tract.

Inhalation hazard is increased at higher temperatures.

Inhalation exposure may cause susceptible individuals to show change in heart beat rhythm i.e. cardiac arrhythmia. Exposures must be terminated.

Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.

Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin).

## CHRONIC HEALTH EFFECTS

■ Principal routes of exposure are usually by skin contact/absorption and inhalation of vapour.

Dichloromethane is stored in body fat and metabolised to carbon monoxide, which reduces the oxygen carrying capacity of blood.

## TOXICITY AND IRRITATION

■ Not available. Refer to individual constituents.

### METHYLENE CHLORIDE:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

### TOXICITY

Oral (human) LDLo: 357 mg/kg

Oral (rat) LD50: 1600 mg/kg

Inhalation (human) TClO: 500 ppm/ 8 hr

Inhalation (rat) LC50: 88000 mg/m<sup>3</sup>/30 m

■ The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

Inhalation (human) TClO: 500 ppm/ 1 y - I Eye(rabbit): 10 mg - mild

### IRRITATION

Skin (rabbit): 810 mg/24hr- SEVERE

Skin (rabbit): 100mg/24hr- Moderate

Eye(rabbit): 162 mg - Moderate

Eye(rabbit): 500 mg/24hr - Mild

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## Section 11 - TOXICOLOGICAL INFORMATION

### CARCINOGEN

Dichloromethane (methylene chloride)	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	2B
	Australia Exposure Standards - Carcinogens	Carcinogen Category	3

### REPROTOXIN

methylene chloride	ILO Chemicals in the electronics industry that have toxic effects on reproduction	Reduced fertility or sterility
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### SKIN

methylene chloride	Australia Exposure Standards - Skin	Notes	Sk
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## Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

S-WELD SPATTER GUARD:

Marine Pollutant: Not Determined

METHYLENE CHLORIDE:

■ Fish LC50 (96hr.) (mg/l):	147.6- 193
■ Daphnia magna EC50 (48hr.) (mg/l):	224
■ BCF<100:	5
■ log Kow (Prager 1995):	1.25
■ Half- life Soil - High (hours):	672
■ Half- life Soil - Low (hours):	168
■ Half- life Air - High (hours):	4584
■ Half- life Air - Low (hours):	458
■ Half- life Surface water - High (hours):	672
■ Half- life Surface water - Low (hours):	168
■ Half- life Ground water - High (hours):	1344
■ Half- life Ground water - Low (hours):	336
■ Aqueous biodegradation - Aerobic - High (hours):	672
■ Aqueous biodegradation - Aerobic - Low (hours):	168
■ Aqueous biodegradation - Anaerobic - High (hours):	2688
■ Aqueous biodegradation - Anaerobic - Low (hours):	672
■ Aqueous biodegradation - Removal secondary treatment - High (hours):	94.50%
■ Photolysis maximum light absorption - High (nano- m):	250
■ Photolysis maximum light absorption - Low (nano- m):	220
■ Photooxidation half- life air - High (hours):	4584
■ Photooxidation half- life air - Low (hours):	458
■ First order hydrolysis half- life (hours):	704 YR

■ For methylene chloride:

log Kow : 1.25

log Koc : 1.68

log Kom : 1.44

Henry's atm m3 /mol: 2.68E-03

BCF : 5

Environmental fate:

Methylene chloride is a volatile liquid, and tends to volatilise to the atmosphere from water and soil. The half-life of methylene chloride volatilisation from water has been found to be 21 minutes under experimental conditions but actual volatilisation from natural waters will depend on the rate of mixing, wind speed,

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temperature, and other factors The Henry's law constant value (H) of 0.002 atm/m<sup>3</sup>/mol indicates that methylene chloride will volatilise rapidly from moist soil and water surfaces

Methylene chloride is not strongly sorbed to soils or sediments Based on its low soil organic carbon partitioning coefficient (K<sub>oc</sub>) of 25, methylene chloride is likely to be very highly mobile in soils and may be expected to leach from soils into groundwater.

Based on a reported log octanol/water partition coefficient (K<sub>ow</sub>) of 1.3 an estimated bioconcentration factor (BCF) of 2.3 was derived. There is no evidence of biomagnification, but because the estimated BCF is low, significant biomagnification of methylene chloride in aquatic food chains is not expected.

Air: The main degradation pathway for methylene chloride in air is its reaction with photochemically generated hydroxyl radicals Thus, the atmospheric lifetime of methylene chloride may be predicted from the hydroxyl radical concentration in air and the rate of reaction. Most reported rates for hydroxyl radical reaction with methylene chloride range from 1.0 x10<sup>-13</sup> to 1.5 x10<sup>-13</sup> cm<sup>3</sup>/mol/sec, and estimates of average atmospheric hydroxyl radical concentration range from 2.5 x10<sup>+5</sup> to 1x10<sup>+6</sup> mol/cm<sup>3</sup> Using this information

average atmospheric lifetime for methylene chloride may be calculated to be 130 days. Because this degradation pathway is relatively slow, methylene chloride may become widely dispersed but is not likely to accumulate in the atmosphere. The small amount of methylene chloride which reaches the stratosphere (about 1%) may undergo direct photolytic degradation; however, photolysis in the troposphere is not expected. Reactions of methylene chloride with ozone or other common atmospheric species (e.g., oxygen atoms, chlorine atoms, and nitrate radicals) are not believed to contribute to its breakdown.

Water: Methylene chloride undergoes slow hydrolysis in water. The experimental half-life reported for the hydrolysis reaction, at neutral conditions, is approximately 18 months at 25 C.

However, the rate of reaction varies greatly with changes in temperature and pH. A hydrolytic half-life of 14 days was reported for methylene chloride in acidic solutions at 80-150 C. This experimental value, when extrapolated to 25 C, is about 700 years. Different mechanisms of hydrolyses may be responsible for these two widely different values.

Both aerobic and anaerobic biodegradation may be an important fate process for methylene chloride in water. Methylene chloride has been observed to undergo degradation at a rapid rate under aerobic conditions.

Reported total methylene chloride loss was 100% after 7 days in a static culture flask biodegradability screening test Sediment and Soil: The rate of biodegradation was found to be dependent on soil type, substrate concentration, and redox state of the soil. Methylene chloride biodegradation has been reported to occur under both aerobic conditions and anaerobic conditions. The biodegradation of methylene chloride appears to be accelerated by the presence of elevated levels of organic carbon.

Methylene chloride has a low tendency to absorb to soil; therefore, there is a potential for leaching to groundwater. Also, because of the high vapor pressure, volatilisation to air is also a likely fate process from dry soil. Its high Henry's law constant (0.002 atm/m<sup>3</sup>/mol) indicates that volatilization from moist soil is also likely.

■ The UK Department of Environment have established that methylene chloride is not a greenhouse gas and the Organisation for Economic Cooperation and Development (OECD) in a Monograph have affirmed that there was no single international view that risk reduction measures are required for the solvent. The Monograph suggests that alternatives may pose a greater risk to the environment.

In the atmosphere methylene chloride degrades by reaction with photochemically produced hydroxy radicals (half-life 6 months). Methylene chloride rapidly volatilises from water and soil to the atmosphere (estimated half-life for volatilisation from water 3-5.6 hours). In soil methylene chloride may partially leach to ground water. It is not expected to bioaccumulate or bioconcentrate in the food chain.

Drinking Water Standards:

hydrocarbon total: 10 ug/l (UK max)

dichloromethane: 20 ug/l (WHO guideline)

Soil Guidelines: Dutch Criteria: detection threshold (target)

20 mg/kg (intervention)

Air Quality Standards:

3 mg/m<sup>3</sup> averaging time 24 hours (WHO guideline).

■ DO NOT discharge into sewer or waterways.

## Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
S- Weld Spatter Guard		No data		

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methylene chloride      LOW    HIGH    LOW    HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Reclaim solvent at an approved site.
- Evaporate or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC  
HAZCHEM: 2X (ADG7)

### ADG7:

Class or division:	6.1	Subsidiary risk:	None
UN No.:	2810	UN packing group:	III
Special provisions:	223, 274	Packing Instructions:	None
Notes:	None	Limited quantities:	5 L
Portable tanks and bulk containers - Instructions:	T7	Portable tanks and bulk containers - Special provisions:	TP1, TP28
Packagings and IBCs - Packing instruction:	P001, IBC03, LP01	Packagings and IBCs - Special packing provisions:	None

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S. (contains methylene chloride)

### Land Transport UNDG:

Class or division:	6.1	Subsidiary risk:	None
UN No.:	2810	UN packing group:	III

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S. (contains methylene chloride)

### Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	2810	Packing Group:	III

Special provisions: A3  
Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S. \*(CONTAINS METHYLENE CHLORIDE)

### Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	2810	Packing Group:	III
EMS Number:	F- A, S- A	Special provisions:	223 274 944
Limited Quantities:	5 L	Marine Pollutant:	Not Determined

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Section 14 - TRANSPORTATION INFORMATION

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.(contains methylene chloride)

## Section 15 - REGULATORY INFORMATION

**POISONS SCHEDULE: S5**

### REGULATIONS

Regulations for ingredients

**methylene chloride (CAS: 75-09-2) is found on the following regulatory lists;**

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - organic compounds)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory Environment Protection Regulation Ecosystem maintenance - Organic chemicals - Non-pesticide anthropogenic organics", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix I", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5", "GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

**No data for S-Weld Spatter Guard (CW: 64723)**

## Section 16 - OTHER INFORMATION

### REPRODUCTIVE HEALTH GUIDELINES

■ Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for the reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits. Uncertainty factors (UFs) have also been incorporated.

Ingredient	ORG	UF	Endpoint	CR	Adeq TLV
methylene chloride	2.4 mg/m3	100	R	14	-

■ These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive

American Industrial Hygiene Association Journal 57: 641-649 (1996).

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors

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determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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*This is the end of the MSDS.*