

# CSS COLD GAL

Chemwatch Material Safety Data Sheet

Issue Date: 27-May-2008

NC317ECP

CHEMWATCH 15-6775

Version No:2.0

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

CSS COLD GAL

### PROPER SHIPPING NAME

AEROSOLS

### PRODUCT USE

Application is by spray atomisation from a hand held aerosol pack. Zinc rich primer for steel.

### SUPPLIER

Company: Construction Supply Specialists Pty Ltd

Address:

PO Box 155

Campbellfield

VIC, 3061

AUS

Company: Construction Supply Specialists Pty Ltd

Address:

6 Broadfield Road

Broadmeadows

VIC, 3047

AUS

Telephone: +61 3 9357 4228

Emergency phone: 02 9673 4488 (Aerocan)

Fax: +61 3 9357 4229

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## Section 2 - HAZARDS IDENTIFICATION

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### STATEMENT OF HAZARDOUS NATURE

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

### POISONS SCHEDULE

None

### RISK

Extremely flammable.

Harmful by inhalation and in contact with skin.

Irritating to eyes respiratory system and skin.

Risk of explosion if heated under confinement.

Danger of serious damage to health by prolonged exposure.

Very toxic to aquatic organisms may cause long- term adverse effects in the aquatic environment.

Vapours may cause drowsiness and dizziness.

### SAFETY

Wear suitable protective clothing.

To clean the floor and all objects contaminated by this material use water and detergent.

This material and its container must be disposed of in a safe way.

Keep away from food drink and animal feeding stuffs.

If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).

Use appropriate container to avoid environment contamination.

Avoid release to the environment. Refer to special instructions/ safety data sheets. This material and its container must be disposed of as hazardous waste.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
zinc powder	7440-66-6	>60
xylene	1330-20-7	10-30
aromatic solvent 100	Not avail.	<10
ingredients nonhazardous		<10
propellant, as dimethyl ether	115-10-6	10-30

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- Not considered a normal route of entry.
- 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.

### EYE

- If aerosols come in contact with the eyes:
- Immediately hold the eyelids apart and flush the eye with fresh 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.
  - If pain persists or recurs seek medical attention.
  - 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).
  - Seek medical attention in event of irritation.

### INHALED

- If aerosols, fumes or combustion products are inhaled:
- Remove to fresh air.
  - Lay patient down. Keep warm and rested.
  - Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
  - If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
  - Transport to hospital, or doctor.

### NOTES TO PHYSICIAN

- For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:
- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
  - Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with

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Section 4 - FIRST AID MEASURES

inadequate tidal volumes or poor arterial blood gases (pO<sub>2</sub> 50 mm Hg) should be intubated.

- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

SMALL FIRE:

- Water spray, dry chemical or CO<sub>2</sub>

LARGE FIRE:

- Water spray or fog.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- 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.
- Equipment should be thoroughly decontaminated after use.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

### FIRE/EXPLOSION HAZARD

- Liquid and vapour are highly flammable.
  - Severe fire hazard when exposed to heat or flame.
  - Vapour forms an explosive mixture with air.
  - Severe explosion hazard, in the form of vapour, when exposed to flame or spark.
  - Vapour may travel a considerable distance to source of ignition.
  - Heating may cause expansion or decomposition with violent container rupture.
  - Aerosol cans may explode on exposure to naked flames.
  - Rupturing containers may rocket and scatter burning materials.
  - Hazards may not be restricted to pressure effects.
  - May emit acrid, poisonous or corrosive fumes.
  - On combustion, may emit toxic fumes of carbon monoxide (CO).
- Combustion products include: carbon dioxide (CO<sub>2</sub>), metal oxides, nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.

### FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

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Section 5 - FIRE FIGHTING MEASURES

HAZCHEM: 2Y

## Personal Protective Equipment

Gas tight chemical resistant suit.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

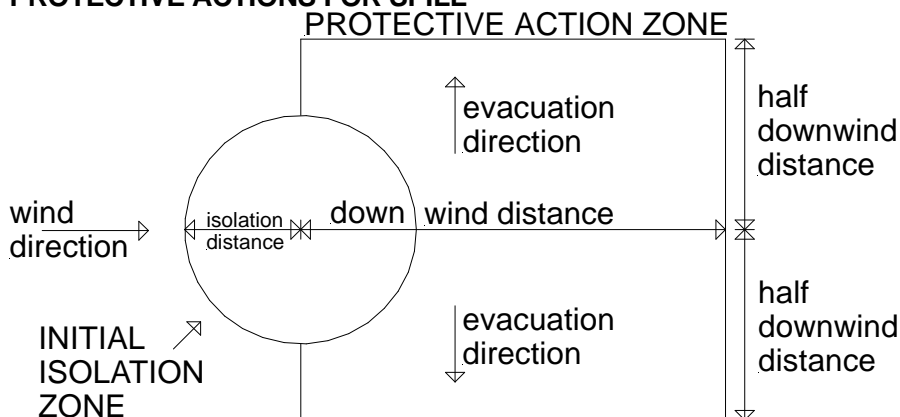
#### MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Wear protective clothing, impervious gloves and safety glasses.
- Shut off all possible sources of ignition and increase ventilation.
- Wipe up.
- If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated.
- Undamaged cans should be gathered and stowed safely.

#### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse / absorb vapour.
- Absorb or cover spill with sand, earth, inert materials or vermiculite.
- If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated.
- Undamaged cans should be gathered and stowed safely.
- Collect residues and seal in labelled drums for disposal.

### PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance

-

Downwind Protection Distance

8 metres

IERG Number

49

FOOTNOTES

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## Section 6 - ACCIDENTAL RELEASE MEASURES

- 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-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 126 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

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

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

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

### SUITABLE CONTAINER

- Aerosol dispenser.
- Check that containers are clearly labelled.

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents.

### STORAGE REQUIREMENTS

- Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can.
- Store in original containers in approved flammable liquid storage area.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- No smoking, naked lights, heat or ignition sources.

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Section 7 - HANDLING AND STORAGE

- Keep containers securely sealed. Contents under pressure.
- Store away from incompatible materials.
- Store in a cool, dry, well ventilated area.
- Avoid storage at temperatures higher than 40 deg C.
- Store in an upright position.
- Protect containers against physical damage.
- Check regularly for spills and leaks.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
Australia Exposure Standards	xylene (Xylene (o-, m-, p- isomers))	80	350	150	655
Australia Exposure Standards	dimethyl ether (Dimethyl ether)	400	760	500	950

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m <sup>3</sup> )	Revised IDLH Value (ppm)
xylene		900

### MATERIAL DATA

Not available. Refer to individual constituents.

### INGREDIENT DATA

XYLENE:

ZINC POWDER:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

## ZINC POWDER:

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

## XYLENE:

IDLH Level: 900 ppm

Odour Threshold Value: 20 ppm (detection), 40 ppm (recognition)

NOTE: Detector tubes for o-xylene, measuring in excess of 10 ppm, are available commercially. (m-xylene and p-xylene give almost the same response).

Xylene vapour is an irritant to the eyes, mucous membranes and skin and causes narcosis at high concentrations. Exposure to doses sufficiently high to produce intoxication and unconsciousness also produces transient liver and kidney toxicity. Neurologic impairment is NOT evident amongst volunteers inhaling up to 400 ppm though complaints of ocular and upper respiratory tract irritation occur at 200 ppm for 3 to 5 minutes.

Exposure to xylene at or below the recommended TLV-TWA and STEL is thought to minimise the risk of irritant effects and to produce neither significant narcosis or chronic injury. An earlier skin notation was deleted because percutaneous absorption is gradual and protracted and does not substantially contribute to the dose received by inhalation.

### ~REPRODUCTIVE HEALTH GUIDELINES

1.5 mg/m <sup>3</sup>	10	D	NA	-
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## AROMATIC SOLVENT 100:

CEL TWA: 50 ppm, 250 mg/m<sup>3</sup> as total hydrocarbons [Manufacturer]

## DIMETHYL ETHER:

The no-effect-level for dimethyl ether is somewhere between 2000 ppm (rabbits) and 50,000 ppm (humans) with possible cardiac sensitisation occurring around 200,000 ppm (dogs). The AIHA has adopted a safety factor of 100 in respect to the 50,000 ppm level in its recommendation for a workplace environmental exposure level (WEEL) which is thought to protect against both narcotic and sensitising effects. This level is consistent with the TLV-TWA of 400 ppm for diethyl ether and should be easily achievable using current technologies. The use of the traditionally allowable excursion of 1.25 to the level of 6.25 ppm is felt to be more than adequate as an upper safe limit of exposure.

Human data:

50,000 ppm (12 mins): Feelings of mild intoxication.

75,000 ppm (12 mins): As above plus slight lack of attenuation.

82,000 ppm (12 mins): Some incoordination, slight blurring of vision

(30 mins): As above plus analgesia of the face and rushing of blood to the face.

100,000 ppm (10-20 mins): Narcotic symptoms

(64 mins) : Sickness (assumed to be nausea)

144,000 ppm (36 mins): Unconsciousness

## PERSONAL PROTECTION

### EYE

No special equipment for minor exposure i.e. when handling small quantities.

OTHERWISE: For potentially moderate or heavy exposures:

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- Safety glasses with side shields.
- NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.

### HANDS/FEET

- No special equipment needed when handling small quantities.
- OTHERWISE:
  - For potentially moderate exposures:
    - Wear general protective gloves, eg. light weight rubber gloves.
  - For potentially heavy exposures:
    - Wear chemical protective gloves, eg. PVC. and safety footwear.

### OTHER

No special equipment needed when handling small quantities.

#### OTHERWISE:

- Overalls.
- Skin cleansing cream.
- Eyewash unit.
- Do not spray on hot surfaces.

### 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	AX- P- - AUS	-
1000	50	-	AX- P- - AUS
5000	50	Airline *	-
5000	100	-	AX- P- - 2
10000	100	-	AX- P- - 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

General exhaust is adequate under normal conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection.

Provide adequate ventilation in warehouse or closed storage areas.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Supplied as an aerosol pack. Contents under PRESSURE. Contains highly flammable ether propellant.

Grey liquid; does not mix with water.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Liquid.

Gas.

Does not mix with water.

Sinks in water.

Molecular Weight: Not Applicable

Melting Range (°C): - 141.5 propellant

Solubility in water (g/L): Immiscible

pH (1% solution): Not Applicable

Volatile Component (%vol): >60

Relative Vapour Density (air=1): Not Available

Lower Explosive Limit (%): 3.45 propellant

Autoignition Temp (°C): 350 propellant

State: Liquid

Boiling Range (°C): - 24.8 propellant

Specific Gravity (water=1): 1.8- 1.9

pH (as supplied): Not Applicable

Vapour Pressure (kPa): 593

Evaporation Rate: Not Available

Flash Point (°C): - 41 p propellant

Upper Explosive Limit (%): 26.7 propellant

Decomposition Temp (°C): Not Available

Viscosity: Not Available

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Elevated temperatures.
- Presence of open flame.
- Product is considered stable.
- Hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

Not normally a hazard due to physical form of product.

Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733).

Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

##### EYE

The material may be irritating to the eye, with prolonged contact causing inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

##### SKIN

Skin contact with the material may be harmful; systemic effects may result following absorption.

The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

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Section 11 - TOXICOLOGICAL INFORMATION

## INHALED

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.

If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.

Xylene is a central nervous system depressant.

## CHRONIC HEALTH EFFECTS

Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

## TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

### ZINC POWDER:

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

#### TOXICITY

Dermal (rabbit) LD50: 1130 mg/kg

Inhalation (human) TClO: 124 mg/m<sup>3</sup>/50min.

#### IRRITATION

Skin (human): 0.3mg/3DaysInt. Mild

### XYLENE:

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

#### TOXICITY

Oral (human) LDLo: 50 mg/kg

Oral (rat) LD50: 4300 mg/kg

Inhalation (human) TClO: 200 ppm

Inhalation (man) LCLo: 10000 ppm/6h

Inhalation (rat) LC50: 5000 ppm/4h

Oral (Human) LD: 50 mg/kg

Inhalation (Human) TClO: 200 ppm/4h

Intraperitoneal (Rat) LD50: 2459 mg/kg

Subcutaneous (Rat) LD50: 1700 mg/kg

Oral (Mouse) LD50: 2119 mg/kg

Intraperitoneal (Mouse) LD50: 1548 mg/kg

Intravenous (Rabbit) LD: 129 mg/kg

Inhalation (Guinea) pig: LC 450 ppm/4h

#### IRRITATION

Skin (rabbit): 500 mg/24h Moderate

Eye (human): 200 ppm Irritant

Eye (rabbit): 87 mg Mild

Eye (rabbit): 5 mg/24h SEVERE

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause 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.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Reproductive effector in rats

### AROMATIC SOLVENT 100:

Not available. Refer to individual constituents.

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### Section 11 - TOXICOLOGICAL INFORMATION

#### DIMETHYL ETHER:

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

#### TOXICITY

Inhalation (rat) LC50: 308000 mg/m<sup>3</sup>

#### IRRITATION

Nil Reported

#### MATERIAL

#### CARCINOGEN

#### REPROTOXIN

#### SENSITISER

#### SKIN

xylene

IARC:3

ILOEI

#### CARCINOGEN

IARC: International Agency for Research on Cancer (IARC) Carcinogens: xylene Category: The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

#### REPROTOXIN

ILOEI: ILO Chemicals in the electronics industry that have toxic effects on reproduction: xylene

### Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

#### ZINC POWDER:

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Zinc is capable of forming complexes with a variety of organic and inorganic groups (ligands). Biological activity can affect the mobility of zinc in the aquatic environment, although the biota contains relatively little zinc compared to the sediments. Zinc bioconcentrates moderately in aquatic organisms; bioconcentration is higher in crustaceans and bivalve species than in fish. Zinc does not concentrate appreciably in plants, and it does not biomagnify significantly through terrestrial food chains. However biomagnification may be of concern if concentration of zinc exceeds 1632 ppm in the top 12 inches of soil.

Zinc can persist in water indefinitely and can be toxic to aquatic life. The threshold concentration for fish is 0.1 ppm. Zinc may be concentrated in the aquatic food chain; it is concentrated over 200,000 times in oysters.

Copper is synergistic but calcium is antagonistic to zinc toxicity in fish. Zinc can accumulate in freshwater animals at 5 -1, 130 times the concentration present in the water . Furthermore, although zinc actively bioaccumulates in aquatic systems, biota appears to represent a relatively minor sink compared to sediments. Steady-state zinc bioconcentration factors (BCFs) for 12 aquatic species range from 4 to 24,000 . Crustaceans and fish can accumulate zinc from both water and food. A BCF of 1,000 was reported for both aquatic plants and fish, and a value of 10, 000 was reported for aquatic invertebrates. The order of enrichment of zinc in different aquatic organisms was as follows (zinc concentrations in µg/g dry weight appear in parentheses): fish (25), shrimp (50), mussel (60), periphyton (260), zooplankton (330), and oyster (3,300). The high enrichment in oysters may be due to their ingestion of particulate matter containing higher concentrations of zinc than ambient water. Other investigators have also indicated that organisms associated with sediments have higher zinc concentrations than organisms living in the aqueous layer . With respect to bioconcentration from soil by terrestrial plants, invertebrates, and mammals, BCFs of 0.4, 8, and 0.6, respectively, have been reported. The concentration of zinc in plants depends

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on the plant species, soil pH, and the composition of the soil

Plant species do not concentrate zinc above the levels present in soil.

In some fish, it has been observed that the level of zinc found in their bodies did not directly relate to the exposure concentrations. Bioaccumulation of zinc in fish is inversely related to the aqueous exposure. This evidence suggests that fish placed in environments with lower zinc concentrations can sequester zinc in their bodies.

The concentration of zinc in drinking water may increase as a result of the distribution system and household plumbing. Common piping materials used in distribution systems often contain zinc, as well as other metals and alloys. Trace metals may enter the water through corrosion products or simply by the dissolution of small amounts of metals with which the water comes in contact. Reactions with materials of the distribution system, particularly in soft low-pH waters, very often have produced concentrations of zinc in tap water much greater than those in the raw or treated waters at the plant of origin.

Zinc gives water a metallic taste at low levels. Overexposures to zinc also have been associated with toxic effects. Ingestion of zinc or zinc-containing compounds has resulted in a variety of systemic effects in the gastrointestinal and hematological systems and alterations in the blood lipid profile in humans and animals. In addition, lesions have been observed in the liver, pancreas, and kidneys of animals.

Environmental toxicity of zinc in water is dependent upon the concentration of other minerals and the pH of the solution, which affect the ligands that associate with zinc.

Zinc occurs in the environment mainly in the +2 oxidation state. Sorption is the dominant reaction, resulting in the enrichment of zinc in suspended and bed sediments. Zinc in aerobic waters is partitioned into sediments through sorption onto hydrous iron and manganese oxides, clay minerals, and organic material. The efficiency of these materials in removing zinc from solution varies according to their concentrations, pH, redox potential (Eh), salinity, nature and concentrations of complexing ligands, cation exchange capacity, and the concentration of zinc. Precipitation of soluble zinc compounds appears to be significant only under reducing conditions in highly polluted water.

Generally, at lower pH values, zinc remains as the free ion. The free ion ( $Zn^{+2}$ ) tends to be adsorbed and transported by suspended solids in unpolluted waters.

Zinc is an essential nutrient that is present in all organisms. Although biota appears to be a minor reservoir of zinc relative to soils and sediments, microbial decomposition of biota in water can produce ligands, such as humic acids, that can affect the mobility of zinc in the aquatic environment through zinc precipitation and adsorption.

The relative mobility of zinc in soil is determined by the same factors that affect its transport in aquatic systems (i.e., solubility of the compound, pH, and salinity)

The redox status of the soil may shift zinc partitioning. Reductive dissolution of iron and manganese (hydr)oxides under suboxic conditions release zinc into the aqueous phase; the persistence of suboxic conditions may then lead to a repartitioning of zinc into sulfide and carbonate solids. The mobility of zinc in soil depends on the solubility of the speciated forms of the element and on soil properties such as cation exchange capacity, pH, redox potential, and chemical species present in soil; under anaerobic conditions, zinc sulfide is the controlling species.

Since zinc sulfide is insoluble, the mobility of zinc in anaerobic soil is low. In a study of the effect of pH on zinc solubility. When the pH is  $<7$ , an inverse relationship exists between the pH and the amount of zinc in solution. As negative charges on soil surfaces increase with increasing pH, additional sites for zinc adsorption are activated and the amount of zinc in solution decreases. The active zinc species in the adsorbed state is the singly charged zinc hydroxide species (i.e.,  $Zn[OH]^+$ ). Other investigators have also shown that the mobility of zinc in soil increases at lower soil pH under oxidizing conditions and at a lower cation exchange capacity of soil. On the other hand, the amount of zinc in solution generally increases when the pH is  $>7$  in soils high in organic matter. This is a result of the release of organically complexed zinc, reduced zinc adsorption at higher pH, or an increase in the concentration of chelating agents in soil. For calcareous soils, the relationship between zinc solubility and pH is nonlinear. At a high pH, zinc in solution is precipitated as  $Zn(OH)_2$ , zinc carbonate ( $ZnCO_3$ ), or calcium zincate. Clay and metal oxides are capable of sorbing zinc and tend to retard its mobility in soil. Zinc was more mobile at pH 4 than at pH 6.5 as a consequence of sorption

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Zinc concentrations in the air are relatively low, except near industrial sources such as smelters. No estimate for the atmospheric lifetime of zinc is available at this time, but the fact that zinc is transported long distances in air indicates that its lifetime in air is at least on the order of days. There are few data regarding the speciation of zinc released to the atmosphere. Zinc is removed from the air by dry and wet deposition, but zinc particles with small diameters and low densities suspended in the atmosphere travel long distances from emission sources.

DO NOT discharge into sewer or waterways.

The material is classified as an ecotoxin\* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

\* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993  
Commission of the European Communities.

## XYLENE:

Fish LC50 (96hr.) (mg/l):	13.5
BCF<100:	2.14- 2.20
log Kow (Prager 1995):	3.12- 3.20
Half- life Soil - High (hours):	672
Half- life Soil - Low (hours):	168
Half- life Air - High (hours):	44
Half- life Air - Low (hours):	2.6
Half- life Surface water - High (hours):	672
Half- life Surface water - Low (hours):	168
Half- life Ground water - High (hours):	8640
Half- life Ground water - Low (hours):	336
Aqueous biodegradation - Aerobic - High (hours):	672
Aqueous biodegradation - Aerobic - Low (hours):	168
Aqueous biodegradation - Anaerobic - High (hours):	8640
Aqueous biodegradation - Anaerobic - Low (hours):	4320
Photolysis maximum light absorption - High (nano- m):	269.5
Photolysis maximum light absorption - Low (nano- m):	265
Photooxidation half- life water - High (hours):	2.70E+08
Photooxidation half- life water - Low (hours):	3.90E+05
Photooxidation half- life air - High (hours):	44
Photooxidation half- life air - Low (hours):	2.6

The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals.

Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions (isomerised olefins and alkenes show variable results). Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.

Under aerobic conditions the material will degrade to water and carbon dioxide, while under anaerobic processes it will produce water, methane and carbon dioxide.

Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

Drinking Water Standards:

hydrocarbon total: 10 ug/l (UK max.).

DO NOT discharge into sewer or waterways.

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The material is classified as an ecotoxin\* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

\* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993

Commission of the European Communities.

DIMETHYL ETHER:

Water solubility (g/l): 35300

log Kow (Sangster 1997): 0.1

log Kow: 0.1-0.12

Koc: 14

Half-life (hr) air: 528

Half-life (hr) H2O surface water: 2.6-30

Henry's atm m<sup>3</sup>/mol: 9.78E-04

BCF: 1.7

Bioaccumulation: not sig

processes Abiotic: RxnOH\*

## Section 13 - DISPOSAL CONSIDERATIONS

- Consult State Land Waste Management Authority for disposal.
- Discharge contents of damaged aerosol cans at an approved site.
- Allow small quantities to evaporate.
- DO NOT incinerate or puncture aerosol cans.
- Bury residues and emptied aerosol cans at an approved site.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE GAS

HAZCHEM: 2Y

UNDG:

Dangerous Goods 2.1

Class:

UN Number: 1950

Shipping Name: AEROSOLS

Subrisk: None

Packing Group: None

### Air Transport IATA:

ICAO/IATA Class: 2.1

UN/ID Number: 1950

Special provisions: A145 A153

Shipping Name: AEROSOLS, FLAMMABLE

ICAO/IATA Subrisk: None

Packing Group: None

### Maritime Transport IMDG:

IMDG Class: 2.1

UN Number: 1950

IMDG Subrisk: SP63

Packing Group: None

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### Section 14 - TRANSPORTATION INFORMATION

EMS Number:	F- D, S- U	Special provisions:	63 190 277 327 959
Limited Quantities:	See SP277	Marine Pollutant:	Not Determined
Shipping Name:	AEROSOLS		

### Section 15 - REGULATORY INFORMATION

**POISONS SCHEDULE: None**

#### REGULATIONS

CSS Cold Gal (CAS: None):

No regulations applicable

zinc powder (CAS: 7440-66-6) is found on the following regulatory lists;

- Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - inorganic chemicals)
- Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)
- Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)
- Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)
- Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)
- Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)
- Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)
- 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) - Schedule 4
- OECD Representative List of High Production Volume (HPV) Chemicals
- WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

xylene (CAS: 1330-20-7) 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 - 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
- Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6
- 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
- IMO Provisional Categorization of Liquid Substances - List 1: Pure or technically pure products
- International Agency for Research on Cancer (IARC) Carcinogens
- International Air Transport Association (IATA) Dangerous Goods Regulations
- 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

dimethyl ether (CAS: 115-10-6) is found on the following regulatory lists;

- Australia Exposure Standards
- Australia Hazardous Substances
- Australia Inventory of Chemical Substances (AICS)
- Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5
- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Council of Chemical Associations (ICCA) - High Production Volume List
- OECD Representative List of High Production Volume (HPV) Chemicals

No data available for aromatic solvent 100 as CAS: Not avail.

### Section 16 - OTHER INFORMATION

#### REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoi nt	CR	Adeq TLV
xylene	1.5 mg/m3	10	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and

continued...

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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).

## EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of vapour components/concentrations:

Composite Exposure Standard for Mixture (TWA) (mg/m<sup>3</sup>): 250 mg/m<sup>3</sup>

If the breathing zone concentration of ANY of the components listed below is exceeded,

"Worst Case" considerations deem the individual to be overexposed.

Component	Breathing Zone ppm	Breathing Zone mg/m <sup>3</sup>	Mixture Conc: (%)
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Component	Breathing zone (ppm)	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc (%)
aromatic solvent 100	50.00	250.0000	10.0

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded,

"Worst Case" considerations deem the individual to be overexposed.

At the "Composite Exposure Standard for Mixture" (TWA) (mg/m<sup>3</sup>): 250 mg/m<sup>3</sup>

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 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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