

# CIGWELD COMWELD VAPAFLUX

Chemwatch Material Safety Data Sheet

Issue Date: 7-Dec-2006

NC317ECP

CHEMWATCH 11276

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

CIGWELD COMWELD VAPAFLUX

### SYNONYMS

"Product Code: 321885"

### PROPER SHIPPING NAME

FLAMMABLE LIQUID, TOXIC, N.O.S.  
(contains methanol)

### PRODUCT USE

Liquid flux applied as a vapour in the flame itself, pyrolysing to form borate fluxing compounds when braze welding steel. Specifically formulated for best results when used with the Comweld Vapaflux dispenser which delivers the correct quantity from the blow-pipe to the flame. It is not suitable for direct application.

### SUPPLIER

Company: CIGWELD Pty Ltd

Address:

71 Gower Street

Preston

VIC 3072

AUS

Telephone: (03) 9474 7400

Telephone: 1300 654 674

Emergency Tel: (03) 9474 7400

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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

S6

#### RISK

Highly flammable.

Toxic by inhalation, in contact with skin and if swallowed.

Irritating to eyes.

Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

HARMFUL - May cause lung damage if swallowed.

Vapours may cause drowsiness and dizziness.

#### SAFETY

Keep away from sources of ignition. No smoking.

Avoid contact with eyes.

Wear suitable protective clothing.

In case of insufficient ventilation wear suitable respiratory equipment.

Use only in well ventilated areas.

Keep container in a well ventilated place.

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

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Section 2 - HAZARDS IDENTIFICATION

Keep container tightly closed.  
This material and its container must be disposed of in a safe way.  
Keep away from food, drink and animal feeding stuffs.  
Take off immediately all contaminated clothing.  
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.  
This material and its container must be disposed of as hazardous waste.  
In case of accident by inhalation: remove casualty to fresh air and keep at rest.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
acetone	67-64-1	30-60
trimethyl borate	121-43-7	30-60
methanol	67-56-1	10-30

## 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.

### 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).
  - 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.

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Section 4 - FIRST AID MEASURES

- Prostheses 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

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute and short term repeated exposures to methanol:

- Toxicity results from accumulation of formaldehyde/formic acid.
- Clinical signs are usually limited to CNS, eyes and GI tract. Severe metabolic acidosis may produce dyspnea and profound systemic effects which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- Forced diuresis is not effective; haemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 mEq/L).
- Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment. 8-Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

Determinant	Index	Sampling Time	Comment
1. Methanol in urine	15 mg/l	End of shift	B, NS
2. Formic acid in urine	80 mg/gm creatinine	Before the shift at end of workweek	B, NS

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

NS: Non-specific determinant - observed following exposure to other materials.

### Section 5 - FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

#### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

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Section 5 - FIRE FIGHTING MEASURES

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- Consider evacuation (or protect in place).
  - Fight fire from a safe distance, with adequate cover.
  - 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.
  - 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.
- When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1000 metres in all directions.

### FIRE/EXPLOSION HAZARD

- Liquid and vapour are highly flammable.
  - Severe fire hazard when exposed to heat, flame and/or oxidisers.
  - Vapour may travel a considerable distance to source of ignition.
  - Heating may cause expansion or decomposition leading to violent rupture of containers.
  - On combustion, may emit toxic fumes of carbon monoxide (CO).
- Other combustion products include: carbon dioxide (CO<sub>2</sub>), formaldehyde, 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.

### HAZCHEM: 3WE

#### Personal Protective Equipment

Breathing apparatus.  
Chemical splash suit.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### 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 small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

#### 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 full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- 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 vapour.
- Contain or absorb spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.

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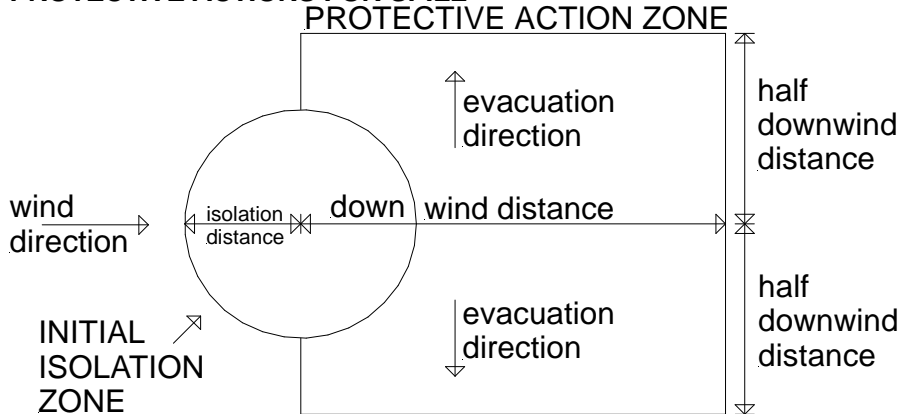
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## Section 6 - ACCIDENTAL RELEASE MEASURES

- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	50 metres
Downwind Protection Distance	300 metres
IERG Number	16

### 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-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 131 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:

acetone	8500 ppm
methanol	5000 ppm

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

acetone	8500 ppm
methanol	1000 ppm

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

acetone 1000 ppm

methanol 200 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

acetone 1000 ppm

methanol 200 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
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R50	>= 0.25%	Corrosive (C)	>= 5.0%
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R51	>= 2.5%		
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else	>= 10%		
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where percentage is percentage of ingredient found in the mixture

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

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers. 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, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- 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.

### SUITABLE CONTAINER

Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid. Check that containers are clearly labelled and free from leaks.

### STORAGE INCOMPATIBILITY

Avoid storage with strong acids, acid chlorides, acid anhydrides, oxidising agents.

### STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.

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Section 7 - HANDLING AND STORAGE

- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for 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>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
Australia Exposure Standards	acetone (Acetone)	500	1185	1000	2375			
Australia Exposure Standards	methanol (Methyl alcohol)	200	262	250	328			

The following materials had no OELs on our record under the following CAS or Chemwatch (CW) numbers

- CIGWELD Comweld Vapaflux CW:11276
- trimethyl borate: No data available for CAS:121-43-7

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m <sup>3</sup> )	Revised IDLH Value (ppm)
acetone		2, 500 [LEL]
methanol		6, 000

### NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

### ODOUR SAFETY FACTOR (OSF)

Not available. Refer to individual constituents.

### INGREDIENT DATA

#### ACETONE:

Odour Threshold Value: 3.6 ppm (detection), 699 ppm (recognition)

Saturation vapour concentration: 237000 ppm @ 20 C

NOTE: Detector tubes measuring in excess of 40 ppm, are available.

Exposure at or below the recommended TLV-TWA is thought to protect the worker against mild irritation associated with brief exposures and the bioaccumulation, chronic irritation of the respiratory tract and headaches associated with long-term acetone exposures. The NIOSH REL-TWA is substantially lower and has taken into account slight irritation experienced by volunteer subjects at 300 ppm. Mild irritation to acclimatised workers begins at about 750 ppm - unacclimatised subjects will experience irritation at about 350-500 ppm but acclimatisation can occur rapidly. Disagreement between the peak bodies is based largely on the view by ACGIH that widespread use of acetone, without evidence of significant adverse health effects at higher concentrations, allows acceptance of a higher limit.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Half-life of acetone in blood is 3 hours which means that no adjustment for shift-length has to be made with reference to the standard 8 hour/day, 40 hours per week because body clearance occurs within any shift with low potential for accumulation.

A STEL has been established to prevent excursions of acetone vapours that could cause depression of the central nervous system.

### TRIMETHYL BORATE:

No exposure limits set by NOHSC or ACGIH.

### METHANOL:

Odour Threshold Value: 4.2-5960 ppm (detection), 53.0-8940 ppm (recognition)

NOTE: Detector tubes for methanol, measuring in excess of 50 ppm, are commercially available.

Exposure at or below the recommended TLV-TWA is thought to substantially reduce the significant risk of headache, blurred vision and other ocular and systemic effects.

## PERSONAL PROTECTION

### EYE

- Safety glasses with side shields.
- Chemical goggles.
- 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

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

### 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- AUS P	-

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

1000	50	-	AX- AUS P
5000	50	Airline *	-
5000	100	-	AX- 2 P
10000	100	-	AX- 3 P
	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

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

#### APPEARANCE

Clear highly flammable liquid with strong sweet solvent odour; mixes with water.

#### PHYSICAL PROPERTIES

Mixes with water.

Toxic or noxious vapours/gas.

Molecular Weight: Not applicable.

Melting Range (°C): Not available

Solubility in water (g/L): Miscible

pH (1% solution): 100

Volatile Component (%vol): Not available

Relative Vapour Density (air=1): Not available

Lower Explosive Limit (%): 2.6

Autoignition Temp (°C): Not available

State: LIQUID

Boiling Range (°C): 56 initial

Specific Gravity (water= 1): 0.8

pH (as supplied): Not applicable

Vapour Pressure (kPa):24 @ 20C

Evaporation Rate: Not available

Flash Point (°C): -17 (acetone)

Upper Explosive Limit (%): 12.8

Decomposition Temp ( °C): Not Available

Viscosity: Not Available

### Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

#### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

### Section 11 - TOXICOLOGICAL INFORMATION

#### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

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Section 11 - TOXICOLOGICAL INFORMATION

## SWALLOWED

There is some evidence to suggest that this material can cause, if swallowed once, very serious, irreversible damage of organs.

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

Methanol may produce a burning or painful sensation in the mouth, throat, chest, and stomach. This may be accompanied by nausea, vomiting, headache, dizziness, shortness of breath, weakness, fatigue, leg cramps, restlessness, confusion, drunken behaviour, visual disturbance, drowsiness, coma and death. These symptoms may not occur until several hours after exposure. Visual impairment produces blurring, double vision, colour distortion, reduced visual field, and blindness. In higher doses, the liver, kidney, heart and muscle can all be damaged. 10mL can cause blindness, and 60-200mL will cause death in adults.

## EYE

There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure.

## SKIN

There is strong evidence to suggest that this material, on a single contact with skin, can cause serious, irreversible damage of organs.

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.

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

There is some evidence to suggest that 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.

## INHALED

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.

There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. 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.

## CHRONIC HEALTH EFFECTS

Long-term exposure to methanol vapour, at concentrations exceeding 3000 ppm, may produce cumulative effects characterised by gastrointestinal disturbances (nausea, vomiting), headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, conjunctivitis and clouded or double vision. Liver and/or kidney injury may also result. Some individuals show severe eye damage following prolonged exposure to 800 ppm of the vapour.

Minor but regular methanol exposures may effect the central nervous system, optic nerves and retinae. Symptoms may be delayed, with headache, fatigue, nausea, blurring of vision and double vision. Continued or severe exposures may cause damage to optic nerves, which may become severe with permanent visual impairment even blindness resulting.

WARNING: Methanol is only slowly eliminated from the body and should be regarded as a cumulative poison which cannot be made non-harmful [CCINFO].

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## Section 11 - TOXICOLOGICAL INFORMATION

### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

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

#### ACETONE:

##### TOXICITY

Oral (man) TDLo: 2857 mg/kg  
Oral (rat) LD50: 5800 mg/kg  
Inhalation (human) TCLo: 500 ppm  
Inhalation (man) TCLo: 12000 ppm/4 hr  
Inhalation (man) TCLo: 10 mg/m<sup>3</sup>/6 hr  
Inhalation (rat) LC50: 50100 mg/m<sup>3</sup>/8 hr  
Dermal (rabbit) LD50: 20000 mg/kg

##### IRRITATION

Eye (human): 500 ppm - Irritant  
Eye (rabbit): 3.95 mg - SEVERE  
Eye (rabbit): 20mg/24hr - Moderate  
Skin (rabbit):395mg (open) - Mild  
Skin (rabbit): 500 mg/24hr - Mild

#### TRIMETHYL BORATE:

##### TOXICITY

Oral (rat) LD50: 6140 mg/kg  
Oral (mouse) LD50: 1290 mg/kg  
Dermal (rabbit) LD50: 1980 mg/kg

##### IRRITATION

Eye (rabbit): 500 mg - Moderate

#### METHANOL:

##### TOXICITY

Oral (human) LDLo: 143 mg/kg  
Oral (man) LDLo: 6422 mg/kg  
Oral (man) TDLo: 3429 mg/kg  
Oral (rat) LD50: 5628 mg/kg  
Inhalation (human) TCLo: 86000 mg/m<sup>3</sup>  
Inhalation (human) TCLo: 300 ppm  
Inhalation (rat) LC50: 64000 ppm/4h  
Dermal (rabbit) LD50: 15800 mg/kg

##### IRRITATION

Skin (rabbit): 20 mg/24 h- Moderate  
Eye (rabbit): 40 mg- Moderate  
Eye (rabbit): 100 mg/24h- Moderate

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.

## Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant:Not Determined

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

#### ACETONE:

Fish LC50 (96hr.) (mg/l):	8300- 40000
Daphnia magna EC50 (48hr.) (mg/l):	10
log Kow (Prager 1995):	- 0.24
log Kow (Sangster 1997):	- 0.24
log Pow (Verschueren 1983):	- 0.24
BOD5:	122%
ThOD:	72
Half- life Soil - High (hours):	168
Half- life Soil - Low (hours):	24
Half- life Air - High (hours):	2790
Half- life Air - Low (hours):	279
Half- life Surface water - High (hours):	168
Half- life Surface water - Low (hours):	24
Half- life Ground water - High (hours):	336

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### Section 12 - ECOLOGICAL INFORMATION

Half- life Ground water - Low (hours):	48
Aqueous biodegradation - Aerobic - High (hours):	168
Aqueous biodegradation - Aerobic - Low (hours):	24
Aqueous biodegradation - Anaerobic - High (hours):	672
Aqueous biodegradation - Anaerobic - Low (hours):	96
Aqueous biodegradation - Removal secondary treatment - High (hours):	75%
Aqueous biodegradation - Removal secondary treatment - Low (hours):	54%
Aqueous photolysis half- life - High (hours):	270
Photooxidation half- life water - High (hours):	3.97E+06
Photooxidation half- life water - Low (hours):	9.92E+04
Photooxidation half- life air - High (hours):	2790
Photooxidation half- life air - Low (hours):	279

DO NOT discharge into sewer or waterways.

log Kow: -0.24

Half-life (hr) air: 312-1896

Half-life (hr) H<sub>2</sub>O surface water: 20

Henry's atm m<sup>3</sup> /mol: 3.67E-05

BOD 5 if unstated: 0.31-1.76,46-55%

COD: 1.12-2.07

ThOD: 2.2

BCF: 0.69

Toxicity Fish: LC50(96) 5540-13000mg/L

Toxicity invertebrate: cell mult. inhib. 28-7500mg/L

Bioaccumulation: not sig

Nitrif. inhib.: 75% decr. at 840mg/L

Anaerobic effects: sig degrad

Degradation Biological: sig

processes Abiotic: Rxn OH<sup>\*</sup>, photodissoc

In air, acetone is lost by photolysis and reaction with photochemically produced hydroxyl radicals; the estimated half-life of these combined processes is about 22 days. The relatively long half-life allows acetone to be transported long distances from its emission source.

Acetone is highly soluble and slightly persistent in water, with a half-life of about 20 hours; it is minimally toxic to aquatic life.

Acetone released to soil volatilises although some may leach into the ground where it rapidly biodegrades.

Acetone does not concentrate in the food chain.

Drinking Water Standard: none available.

Soil Guidelines: none available.

Air Quality Standards: none available.

#### METHANOL:

DO NOT discharge into sewer or waterways.

log Kow: -0.82- -0.66

Half-life (hr) air: 427

Half-life (hr) H<sub>2</sub>O surface water: 5.3-64

Henry's atm m<sup>3</sup> /mol: 1.35E-04

BOD 5 if unstated: 0.76-1.12

COD: 1.05-1.50,99%

ThOD: 1.5

BCF: 0.2-10

Toxicity Fish: LC50(96): 11-15mg/L

TLm(48Hr): 8000mg/L (trout)

Toxicity Arthropoda: NOEL 10 g/L/48Hr (Daphnia) [ICI]

continued...

# CIGWELD COMWELD VAPAFLUX

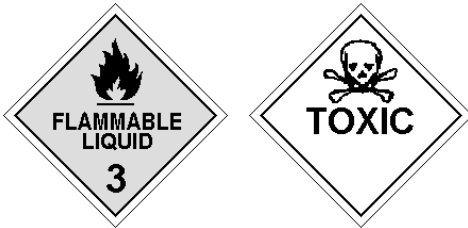
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## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
  - Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
  - Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
  - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
  - Containers may still present a chemical hazard/ danger when empty.
  - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID, TOXIC  
HAZCHEM: 3WE

### UNDG:

Dangerous Goods Class:	3	Subrisk:	6.1
UN Number:	1992	Packing Group:	II
Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S. (contains methanol)			

### Air Transport IATA:

ICAO/IATA Class:	None	ICAO/IATA Subrisk:	6.1
UN/ID Number:	1992	Packing Group:	II
ERG Code:	-		
Shipping Name: Flammable liquid, toxic n.o.s.			

### Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	6.1
UN Number:	1992	Packing Group:	II
EMS Number:	F- E, S- D	Marine Pollutant:	Not Determined
Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S.			

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: S6

continued...

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Section 15 - REGULATORY INFORMATION

## REGULATIONS

David Craig Acetone (CAS: 67-64-1) is found on the following regulatory lists;  
Australia - Australia New Zealand Food Standards Code - Processing Aids - Permitted extraction solvents  
Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Illicit Drug Reagents/Essential Chemicals - Category III  
Australia Inventory of Chemical Substances (AICS)  
Australia National Pollutant Inventory  
Australia Poisons Schedule  
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances  
OECD Representative List of High Production Volume (HPV) Chemicals  
United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II (English)

trimethyl borate (CAS: 121-43-7) is found on the following regulatory lists;  
Australia Inventory of Chemical Substances (AICS)  
Australia National Pollutant Inventory  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6  
OECD Representative List of High Production Volume (HPV) Chemicals

methanol (CAS: 67-56-1) is found on the following regulatory lists;  
Australia - Australia New Zealand Food Standards Code - Contaminants and Natural Toxicants - Maximum levels of non-metal contaminants in food  
Australia - Australia New Zealand Food Standards Code - Food Additives - Maximum levels of specified contaminants and natural toxicants in nominated foods  
Australia - Australia New Zealand Food Standards Code - Processing Aids - Permitted extraction solvents  
Australia - New South Wales Hazardous Substances Prohibited for Specific Uses  
Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
Australia National Pollutant Inventory  
Australia Poisons Schedule  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6  
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

## 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
methanol	262 mg/m3	NA	NA	NA	Yes	

continued...

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Section 16 - OTHER INFORMATION

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## EXPOSURE STANDARD FOR MIXTURES

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