

DENTSPLY CERGO DIE COLOR LAYER

Chemwatch Material Safety Data Sheet
Issue Date: Mon 29-Aug-2005

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DENTSPLY CERGO DIE COLOR LAYER

SYNONYMS

PROPER SHIPPING NAME

ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

PRODUCT USE

Dental use.

SUPPLIER

Company: Dentsply (Australia) Pty Ltd (ABN: 15 004 290 322)
Address:
11-21 Gilby Road
Mount Waverley
VIC, 3149
AUS
Telephone: +61 3 9538 8240
Emergency Tel: 0413 830 239
Fax: +61 3 9538 8260

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

POISONS SCHEDULE

None

RISK

Highly flammable.
Irritating to eyes.
Inhalation and/or ingestion may produce health damage*.
Cumulative effects may result following exposure*.
May produce discomfort of the respiratory system and skin*.
Vapours potentially cause drowsiness and dizziness*.
* (limited evidence).

SAFETY

Do not breathe gas/fumes/vapour/spray.
Wear eye/face protection.
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.
Take off immediately all contaminated clothing.
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).
If you feel unwell contact Doctor or Poisons Information Centre. (Show the label if possible).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ethanol	64-17-5	>50
pigments		NotSpec
binders		NotSpec

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- 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.
- Transport to hospital or doctor without delay.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately 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 fumes or combustion products are inhaled remove from contaminated area.
- 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.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if

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Section 4 - FIRST AID MEASURES

necessary.

- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

For acute or short term repeated exposures to ethanol:

- Acute ingestion in non-tolerant patients usually responds to supportive care with special attention to prevention of aspiration, replacement of fluid and correction of nutritional deficiencies (magnesium, thiamine pyrodoxine, Vitamins C K)
 - Give 50% dextrose (50-100 ml) IV to obtunded patients following blood draw for glucose determination.
 - Comatose patients should be treated with initial attention to airway, breathing, circulation and drugs of immediate importance (glucose, thiamine)
 - Decontamination is probably unnecessary more than 1 hour after a single observed ingestion. Cathartics and charcoal may be given but are probably not effective in single ingestions.
 - Fructose administration is contra-indicated due to side effects.
-

Section 5 - FIRE FIGHTING MEASURES

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.
 - May be violently or explosively reactive.
 - Wear breathing apparatus plus protective gloves.
 - Prevent, by any means available, spillage from entering drains or water course.
 - 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 the 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 500 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).
- Combustion products include, carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

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Section 5 - FIRE FIGHTING MEASURES

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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Personal Protective Equipment

PERSONAL PROTECTION EQUIPMENT

Gloves, boots (chemical resistant).

Breathing apparatus.

Section 6 - ACCIDENTAL RELEASE MEASURES

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 breathing apparatus plus protective gloves.
- 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 /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (ppm)	Revised IDLH Value (mg/m ³)
Ethyl alcohol	3,300 [LEL]	

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

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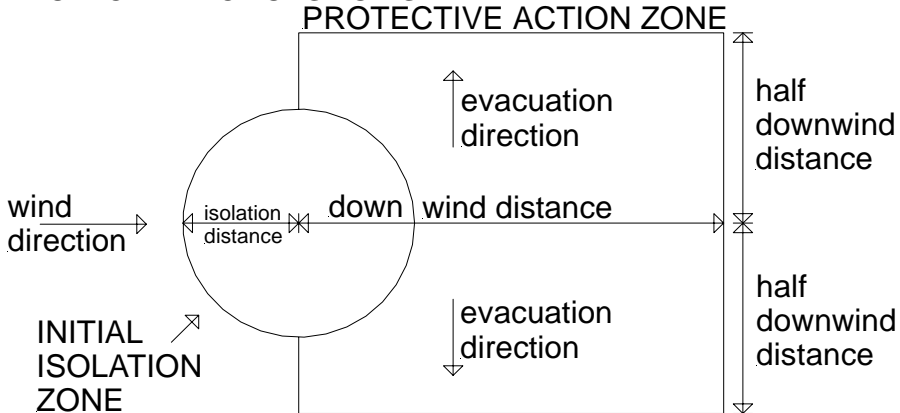
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Section 6 - ACCIDENTAL RELEASE MEASURES

indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	300 metres
IERG Number	14

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 127 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:
ethanol 3300 ppm

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Section 6 - ACCIDENTAL RELEASE MEASURES

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

ethanol 3300 ppm

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

ethanol 3000 ppm

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

ethanol 1000 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according exceed the following cutoffs

Very Toxic (T+) $\geq 0.1\%$	Toxic (T) $\geq 3.0\%$
R50 $\geq 0.25\%$	Corrosive (C) $\geq 5.0\%$
R51 $\geq 2.5\%$	
else $\geq 10\%$	

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 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.
- DO NOT allow clothing wet with material to stay in contact with skin.

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.

- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package,

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Section 7 - HANDLING AND STORAGE

the can must have a screwed enclosure.

- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C)
- (i) : Removable head packaging;
- (ii) : Cans with friction closures and
- (iii) : low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages
- In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

STORAGE INCOMPATIBILITY

Incompatible with aluminium. DO NOT heat above 49 deg. C. in aluminium equipment.
Segregate from strong oxidisers.

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
 - 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.
- Store between 10 and 25 deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³
Australian Exposure Standards	Ethyl alcohol	1,000	1,880				

Not available. Refer to individual constituents.

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.

Ingredient	ORG	UF	Endpoint	CR	TLV Adeq
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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ethanol 1880 mg/m³ NA NA NA Yes

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).

INGREDIENT DATA

ETHANOL:

Odour Threshold Value: 49-716 ppm (detection), 101 ppm (recognition)

Eye and respiratory tract irritation do not appear to occur at exposure levels of less than 5000 ppm and the TLV-TWA is thought to provide an adequate margin of safety against such effects.

Experiments in man show that inhalation of 1000 ppm caused slight symptoms of poisoning and 5000 ppm caused strong stupor and morbid sleepiness.

Subjects exposed to 5000 ppm to 10000 ppm experienced smarting of the eyes and nose and coughing. Symptoms disappeared within minutes.

Inhalation also causes local irritating effects to the eyes and upper respiratory tract, headaches, sensation of heat intraocular tension, stupor, fatigue and a need to sleep.

At 15000 ppm there was continuous lachrymation and coughing.

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

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.

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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	A-AUS	-
1000	50	-	A-AUS
5000	50	Airline *	-
5000	100	-	A-2
10000	100	-	A-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

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

Colourled, highly flammable liquid with a characteristic odour; mixes with water.

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

Molecular Weight: Not Applicable

Melting Range (°C): -117 (ethanol)

Solubility in water (g/L): Miscible

pH (1% solution): Not Available

Volatile Component (%vol): Not Available

Relative Vapour Density (air=1): Not Available

Lower Explosive Limit (%): 3.5 (ethanol)

Autoignition Temp (°C): 425 (ethanol)

State: Liquid

Boiling Range (°C): 78 (ethanol)

Specific Gravity (water=1): 0.81 @ 20 degC

pH (as supplied): 7

Vapour Pressure (kPa): Not Available

Evaporation Rate: Not Available

Flash Point (°C): 17 (ethanol)

Upper Explosive Limit (%): 28 (ethanol)

Decomposition Temp (°C): Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Segregate from strong oxidisers.

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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.

Ingestion of ethanol may produce nausea, vomiting, gastrointestinal bleeding, abdominal pain and diarrhoea. Systemic effects:

Blood concentration: Effects:

<1.5 g/l	Mild: Impaired visual acuity, coordination and reaction time, emotional lability
1.5-3.0 g/l	Moderate: Slurred speech, confusion, ataxia, emotional lability, perceptual and sensation disturbances possible blackout spells, and incoordination with impaired objective performance in standardised tests. Possible diplopia, flushing, tachycardia, sweating and incontinence. Bradypnoea may occur early and tachypnoea may develop in cases of metabolic acidosis, hypoglycaemia and hypokalaemia. CNS depression may progress to coma.
3-5 g/l	Severe: Cold clammy skin, hypothermia and hypotension. Atrial fibrillation and atrioventricular block have been reported. Respiratory depression may occur, respiratory failure may follow serious intoxication, aspiration of vomitus may result in pneumonitis and pulmonary oedema. Convulsions due to severe hypoglycaemia may also occur. Acute hepatitis may develop.

EYE

Direct contact of the eye with ethanol may cause immediate stinging and burning with reflex closure of the lid and tearing, transient injury of the corneal epithelium and hyperaemia of the conjunctiva. Foreign-body type discomfort may persist for up to 2 days but healing is usually spontaneous and complete.

SKIN

The material may produce moderate skin irritation; limited evidence or practical experience suggests, that the material either:

- produces moderate inflammation of the skin in a substantial number of individuals following direct contact and/or
- produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present

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Section 11 - TOXICOLOGICAL INFORMATION

twenty-four hours or more after the end of the exposure period.

Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

INHALED

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, drowsiness, reduced alertness, loss of reflexes, lack of coordination and vertigo.

The most common signs of inhalation overexposure to ethanol, in animals, include ataxia, incoordination and drowsiness for those surviving narcosis. The narcotic dose for rats, after 2 hours of exposure, is 19260 ppm.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination.

CHRONIC HEALTH EFFECTS

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Long-term exposure to ethanol may result in progressive liver damage with fibrosis or may exacerbate liver injury caused by other agents. Repeated ingestion of ethanol by pregnant women may adversely affect the central nervous system of the developing fetus, producing effects collectively described as fetal alcohol syndrome. These include mental and physical retardation, learning disturbances, motor and language deficiency, behavioural disorders and reduced head size. Consumption of ethanol (in alcoholic beverages) may be linked to the development of Type I hypersensitivities in a small number of individuals. Symptoms, which may appear immediately after consumption, include conjunctivitis, angioedema, dyspnoea, and urticarial rashes. The causative agent may be acetic acid, a metabolite (1). (1) Boehncke W.H., & H.Gall, *Clinical & Experimental Allergy*, 26, 1089-1091, 1996.

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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

ETHANOL: TOXICITY

Oral (rat) LD50: 7060 mg/kg
Oral (human) LDLo: 1400 mg/kg
Oral (man) TDLo: 50 mg/kg
Oral (man) TDLo: 1.40 mg/kg
Oral (woman) TDLo: 256 mg/kg/12 wks
Inhalation (rat) LC50: 20,000 ppm/10h

IRRITATION

Skin (rabbit):20 mg/24hr-Moderate
Skin (rabbit):400 mg (open)-Mild
Eye (rabbit):100mg/24hr-Moderate
Eye (rabbit): 500 mg SEVERE

Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.
Refer to data for ingredients, which follows:

ETHANOL:

Fish LC50 (96hr.) (mg/l): 13480
Algae IC50 (72hr.) (mg/l): 1450
log Kow (Sangster 1997): -0.3
BOD5: 63%
ThOD: 2.1
Half-life Soil - High (hours): 24
Half-life Soil - Low (hours): 2.6
Half-life Air - High (hours): 122
Half-life Air - Low (hours): 12.2
Half-life Surface water - High (hours): 26
Half-life Surface water - Low (hours): 6.5
Half-life Ground water - High (hours): 52
Half-life Ground water - Low (hours): 13
Aqueous biodegradation - Aerobic - High (hours): 26
Aqueous biodegradation - Aerobic - Low (hours): 6.5
Aqueous biodegradation - Anaerobic - High (hours): 104
Aqueous biodegradation - Anaerobic - Low (hours): 26
Aqueous biodegradation - Removal secondary treatment - High (hours): 67%
Photooxidation half-life water - High (hours): 3.20E+05
Photooxidation half-life water - Low (hours): 8020
Photooxidation half-life air - High (hours): 122
Photooxidation half-life air - Low (hours): 12.2

log Kow : -0.31- -0.32
Half-life (hr) air : 144
Half-life (hr) H2O surface water : 144
Henry's atm m3 /mol: 6.29E-06
BOD 5 if unstated: 0.93-1.67,63%
COD : 1.99-2.11,97%
ThOD : 2.1

When ethanol is released into the soil it readily and quickly biodegrades but may leach into ground water; most is lost by evaporation. When released into water the material readily evaporates and is biodegradable. Ethanol does not bioaccumulate to an appreciable extent. The material is readily degraded by reaction with photochemically produced

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Section 12 - ECOLOGICAL INFORMATION

hydroxy radicals; release into air will result in photodegradation and wet deposition.

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
 - Consult State Land Waste Management Authority for disposal.
 - Recycle containers if possible, or dispose of in an authorised landfill.
- Puncture containers to prevent re-use and bury at an authorised landfill.
-

Section 14 - TRANSPORTATION INFORMATION

Shipping Name:
ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Dangerous Goods Class: 3
Subrisk: None
UN/NA Number: 1170
Packing Group: II
Labels Required: flammable liquid
Additional Shipping Information:
International Transport Regulations:
IMO Dangerous Goods class: 1170
IMO Packing group: None
IATA Dangerous goods class: 3
Cargo Instructions: 307
Cargo Max: 60 L
Passenger Instructions: 305
Passenger Max: 5 L
Special Provisions: A3, None

HAZCHEM

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Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

ethanol (CAS: 64-17-5) is found on the following regulatory lists:
Australian Inventory of Chemical Substances (AICS)
Australian Poisons Schedule
Australia High Volume Industrial Chemical List (HVICL)

Section 16 - OTHER INFORMATION

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