

Chemwatch: 24-9186 Version No: 2.1.1.1 Safety Data Sheet according to WHS and ADG requirements Chemwatch Hazard Alert Code: 3

Issue Date: 27/06/2017 Print Date: 05/03/2018 S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

## Product Identifier

Product name	Graffiti Remover
Synonyms	Not Available
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains isopropanol)
Other means of identification	Not Available
Relevant identified uses of the substance or mixture and uses advised against	

Relevant identified uses Used to remove graffiti from walls and painted surfaces.

#### Details of the supplier of the safety data sheet

Registered company name	Chemeco (Aust)
Address	17 Yale Drive Epping VIC 3076
Telephone	+61 3 9408 8699
Fax	+61 3 9408 8399
Website	www.chemeco.com.au
Email	info@chemeco.com.au

#### Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

#### **SECTION 2 HAZARDS IDENTIFICATION**

#### Classification of the substance or mixture

## HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	S6	
Classification <sup>[1]</sup>	Flammable Liquid Category 2, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (narcotic effects), Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1	
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI	
Label elements		
GHS label elements		
SIGNAL WORD	DANGER	
Hazard statement(s)		
H225	Highly flammable liquid and vapour.	
H302	Harmful if swallowed.	
H312	Harmful in contact with skin.	
H332	Harmful if inhaled.	

H315	Causes skin irritation.	
H319	Causes serious eye irritation.	
H317	May cause an allergic skin reaction.	
H336	May cause drowsiness or dizziness.	
H410	Very toxic to aquatic life with long lasting effects.	
Precautionary statement(s) Prevention		
P210	Keen away from heat/sparks/open flames/hot surfaces - No smoking	

P210	Keep away from heat/sparks/open flames/hot surfaces No smoking.	
P271	Use only outdoors or in a well-ventilated area.	
P280	Wear protective gloves/protective clothing/eye protection/face protection.	
P240	Ground/bond container and receiving equipment.	

## Precautionary statement(s) Response

P362	Take off contaminated clothing and wash before reuse.	
P363	Wash contaminated clothing before reuse.	
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.	
P302+P352	IF ON SKIN: Wash with plenty of soap and water.	

#### Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.	
P405	Store locked up.	
P403+P233	Store in a well-ventilated place. Keep container tightly closed.	

## Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
111-76-2	30-60	ethylene glycol monobutyl ether
5989-27-5	10-30	d-limonene
67-63-0	10-30	isopropanol
Not Available	<10	surfactant
50-21-5	<10	lactic acid

## **SECTION 4 FIRST AID MEASURES**

#### Description of first aid measures

Eye Contact	<ul> <li>If this product comes in contact with the eyes:</li> <li>Wash out immediately with fresh running water.</li> <li>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.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
Skin Contact	<ul> <li>If skin contact occurs:</li> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
Inhalation	<ul> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>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.</li> <li>Transport to hospital, or doctor.</li> </ul>
Ingestion	<ul> <li>For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>Urgent hospital treatment is likely to be needed.</li> <li>If swallowed do NOT induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Transport to hospital or doctor without delay.</li> </ul>

#### Indication of any immediate medical attention and special treatment needed

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.

Followed acute or short term repeated exposures to ethylene glycol monoalkyl ethers and their acetates:

- Hepatic metabolism produces ethylene glycol as a metabolite.
- Clinical presentation, following severe intoxication, resembles that of ethylene glycol exposures.
- Monitoring the urinary excretion of the alkoxyacetic acid metabolites may be a useful indication of exposure. [Ellenhorn and Barceloux: Medical Toxicology]

For acute or short term repeated exposures to ethylene glycol:

- · Early treatment of ingestion is important. Ensure emesis is satisfactory.
- Test and correct for metabolic acidosis and hypocalcaemia.
- Apply sustained diuresis when possible with hypertonic mannitol.
- Evaluate renal status and begin haemodialysis if indicated. [I.L.O]
- Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
- Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium bicarbonate solution.
   Ethanol therapy prolongs the half-life of ethylene glycol and reduces the formation of toxic metabolites.
- Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2 days.
- Magnesium is also a cofactor and should be replenished. The status of 4-methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material and its metabolites, haemodialysis is much superior to peritoneal dialysis.

#### [Ellenhorn and Barceloux: Medical Toxicology]

It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy-acetic acids per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may be associated with such exposures. *Laitinen J., et al: Occupational & Environmental Medicine 1996; 53, 595-600* 

## **SECTION 5 FIREFIGHTING MEASURES**

#### Extinguishing media

- Water spray or fog.
- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.
- Do not use a water jet to fight fire.

#### Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
Advice for firefighters	
Fire Fighting	<ul> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>May be violently or explosively reactive.</li> <li>Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>Prevent, by any means available, spillage from entering drains or water course.</li> </ul>
Fire/Explosion Hazard	<ul> <li>Liquid and vapour are highly flammable.</li> <li>Severe fire hazard when exposed to heat, flame and/or oxidisers.</li> <li>Vapour may travel a considerable distance to source of ignition.</li> <li>Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>Combustion products include:, carbon dioxide (CO2), other pyrolysis products typical of burning organic material</li> </ul>

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

#### **Environmental precautions**

See section 12

#### Methods and material for containment and cleaning up

Minor Spills	<ul> <li>Remove all ignition sources.</li> <li>Clean up all spills immediately.</li> <li>Avoid breathing vapours and contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective equipment.</li> </ul>
Major Spills	<ul> <li>Clear area of personnel and move upwind.</li> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>May be violently or explosively reactive.</li> <li>Wear breathing apparatus plus protective gloves.</li> </ul>

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

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

Safe handling	<ul> <li>Containers, even those that have been emptied, may contain explosive vapours.</li> <li>Do NOT cut, drill, grind, weld or perform similar operations on or near containers.</li> <li>DO NOT allow clothing wet with material to stay in contact with skin</li> <li>Avoid all personal contact, including inhalation.</li> <li>Wear protective clothing when risk of exposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Prevent concentration in hollows and sumps.</li> </ul>

Other information	<ul> <li>Store in original containers in approved flame-proof area.</li> <li>No smoking, naked lights, heat or ignition sources.</li> <li>DO NOT store in pits, depressions, basements or areas where vapours may be trapped.</li> <li>Keep containers securely sealed.</li> </ul>		
Conditions for safe storage,	Conditions for safe storage, including any incompatibilities		
Suitable container	<ul> <li>DO NOT use aluminium or galvanised containers</li> <li>Packing as supplied by manufacturer.</li> <li>Plastic containers may only be used if approved for flammable liquid.</li> <li>Check that containers are clearly labelled and free from leaks.</li> </ul>		
Storage incompatibility	Avoid storage with oxidisers		

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	ethylene glycol monobutyl ether	2-Butoxyethanol	96.9 mg/m3 / 20 ppm	242 mg/m3 / 50 ppm	Not Available	Sk
Australia Exposure Standards	isopropanol	Isopropyl alcohol	983 mg/m3 / 400 ppm	1230 mg/m3 / 500 ppm	Not Available	Not Available

## EMERGENCY LIMITS

Ingredient	Material name TEEL		EL-1	TEEL-2	TEEL-3
ethylene glycol monobutyl ether	r Butoxyethanol, 2-; (Glycol ether EB) 20 ppr		ppm	20 ppm	700 ppm
d-limonene	Limonene, d- 20 pr		ppm	20 ppm	160 ppm
isopropanol	Isopropyl alcohol	400	) ppm	400 ppm	12000 ppm
lactic acid	Lactic acid	0.4	7 mg/m3	5.2 mg/m3	700 mg/m3
Ingredient	Original IDLH		Revised IDLH		
ethylene glycol monobutyl ether	700 ppm		700 [Unch] ppm		
d-limonene	Not Available		Not Available		
isopropanol	12,000 ppm		2,000 [LEL] ppm		
surfactant	Not Available		Not Available		
lactic acid	Not Available		Not Available		

#### Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	<ul> <li>Safety glasses with side shields.</li> <li>Chemical goggles.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul> <li>Wear chemical protective gloves, e.g. PVC.</li> <li>Wear safety footwear or safety gumboots, e.g. Rubber</li> <li>NOTE:</li> <li>The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> <li>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</li> <li>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</li> <li>Suitability and durability of glove type is dependent on usage.</li> </ul>
Body protection	See Other protection below
Other protection	<ul> <li>Overalls.</li> <li>PVC Apron.</li> <li>PVC protective suit may be required if exposure severe.</li> <li>Eyewash unit.</li> <li>Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.</li> <li>For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).</li> <li>Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound</li> </ul>

chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.
 Thermal hazards

#### Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection:

NV Chemicals Graffiti Remover

Material	CPI
##lactic	acid
NITRILE	A

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove,

a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

#### **Respiratory protection**

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	A-AUS / Class 1	-	A-PAPR-AUS / Class 1
up to 25 x ES	Air-line*	A-2	A-PAPR-2
up to 50 x ES	-	A-3	-
50+ x ES	-	Air-line**	-

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

#### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

Appearance	Clear, colourless flammable liquid with a sweet odour: miscible with	water.	
	,,,,,,,		
Physical state	Liquid	Relative density (Water = 1)	0.81
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	<100	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	11.7 (isopropanol)	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	>90
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	>1	VOC g/L	Not Available

#### SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul> <li>Unstable in the presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

Inhaled	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. 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 hazard is increased at higher temperatures. Ethylene glycol monobutyl ether can destroy the blood cells with long term exposure. It also causes eye, nose and throat discomfort. Higher doses can cause blood in the urine. The odour of isopropanol may give some warning of exposure, but odour fatigue may occur. Inhalation of isopropanol may produce irritation of the nose and throat with sneezing, sore throat and runny nose. The effects in animals subject to a single exposure, by inhalation, included inactivity or anaesthesia and histopathological changes in the nasal canal and auditory canal. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.				
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Severe acute exposure to ethylene glycol monobutyl ether, by ingestion, may cause kidney damage, haemoglobinuria, (blood in urine) and is potentially fatal. Following ingestion, a single exposure to isopropyl alcohol produced lethargy and non-specific effects such as weight loss and irritation. Ingestion of near-lethal doses of isopropanol produces histopathological changes of the stomach, lungs and kidneys, incoordination, lethargy, gastrointestinal tract irritation, and inactivity or anaesthesia. Swallowing 10 ml. of isopropanol may cause serious injury; 100 ml. d-limonene, if ingested, causes a non-bloody diarrhoea and abnormalities in bone formation. A strong urge to pass bowel may occur with little or no stools actually passed				
Skin Contact	Skin contact with the material may be harmful; systemic effects of The material may cause mild but significant inflammation of the skin effects contact dermatitis which is characterised by redness, swelling an Open cuts, abraded or irritated skin should not be exposed to the Entry into the blood-stream, through, for example, cuts, abrasion prior to the use of the material and ensure that any external dam Ethylene glycol monobutyl ether penetrates the skin easily and w	may result following absorption. ither following direct contact or after a delay of some time. Repeated exposure can cause nd blistering. is material ns or lesions, may produce systemic injury with harmful effects. Examine the skin nage is suitably protected. will cause more harm on skin contact than through inhalation.			
Eye	There is evidence that material may produce eye irritation in son Severe inflammation may be expected with pain.	ne persons and produce eye damage 24 hours or more after instillation.			
Chronic	Skin contact with the material is more likely to cause a sensitisal Substance accumulation, in the human body, may occur and ma There is some evidence from animal testing that exposure to this Based on experience with similar materials, there is a possibility not cause other toxic effects.	tion reaction in some persons compared to the general population. ay cause some concern following repeated or long-term occupational exposure. s material may result in toxic effects to the unborn baby. that exposure to the material may reduce fertility in humans at levels which do			
	TOVICITY				
NV Chemicals Graffiti Remover	Not Available	Not Available			
ethylene glycol monobutyl ether	TOXICITY           dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup> Inhalation (rat) LC50: 450 ppm/4hr <sup>[2]</sup> Oral (rat) LD50: 250 mg/kg <sup>[2]</sup>	IRRITATION         * [Union Carbide]         Eye (rabbit): 100 mg SEVERE         Eye (rabbit): 100 mg/24h-moderate         Skin (rabbit): 500 mg, open; mild			
	τοχιριτγ				
d-limonene	Dermal (rabbit)   D50: $>5000 \text{ mg/kg}^{[2]}$	Nil reported			
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (rabbit): 500mg/24h moderate			
	τοχιςιτγ				
	Dermal (rabbit)   D50: 12792 mg/kg <sup>[1]</sup>	Eve (rabbit): 10 mg - moderate			
isopropanol	Inhalation (rat) LC50: 72.6 mg/L/4hr <sup>[2]</sup>	Eye (rabbit): 100 mg - SEVERE			
	Oral (rat) LD50: 5000 mg/kg <sup>[2]</sup>	Eye (rabbit): 100mg/24hr-moderate Skin (rabbit): 500 mg - mild			
	ΤΟΧΙΟΙΤΥ	IRRITATION			
lactic acid	Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup>	Eye (rabbit): 0.750 mg SEVERE			
	Oral (rat) LD50: 3543 mg/kg <sup>[2]</sup>	Skin (rabbit): 5 mg/24h SEVERE			
Legend:	<ol> <li>Value obtained from Europe ECHA Registered Substances - specified data extracted from RTECS - Register of Toxic Effect of</li> </ol>	Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise of chemical Substances			
ETHYLENE GLYCOL MONOBUTYL ETHER	For ethylene glycol monoalkyl ethers and their acetates (EGMAE Typical members of this category are ethylene glycol propylene ether (EGHE) and their acetates. EGMAEs are substrates for alcohol dehydrogenase isozyme ADH-3, which metabolites). Further, rapid conversion of the aldehydes by aldehyde dehyd	Es): ether (EGPE), ethylene glycol butyl ether (EGBE) and ethylene glycol hexyl catalyzes the conversion of their terminal alcohols to aldehydes (which are transient rogenase produces alkoxyacetic acids, which are the predominant urinary			

	metabolites of mono substituted glycol ethers. Acute Toxicity: Oral LD50 values in rats for all category decreasing molecular weight. Exposure of pregnant rats to ethylene glycol monobut resulted in maternal toxicity and embryotoxicity including poorly ossified or unossified skeletal elements was also a At least one researcher has stated that the reproductive For ethylene glycol: Ethylene glycol is quickly and extensively absorbed throw through the respiratory tract; dermal absorption is appare according to total body water. In most mammalian specie NOTE: Changes in kidney, liver, spleen and lungs are observ	w members range from 739 (EGHE by ether (2-butoxyethanol) at 10 g a decreased number of viable i apparent in rats. Teratogenic effec effects were less than that of othe ugh the gastrointestinal tract. Limi ently slow. Following absorption, e es, including humans, ethylene gly red in animals exposed to high conce	E) to 3089 mg/kg bw (EGPE), with values increasing with D ppm or rabbits at 200 ppm during organogenesis mplantations per litter. Slight foetoxicity in the form of ts were not observed in other species. r monoalkyl ethers of ethylene glycol. ted information suggests that it is also absorbed thylene glycol is distributed throughout the body rcol is initially metabolised by alcohol. Intrations of this substance by all routes. ** ASCC (NZ) SDS
D-LIMONENE	The following information refers to contact allergens as a Contact allergies quickly manifest themselves as contact eczema involves a cell-mediated (T lymphocytes) immures antibody-mediated immune reactions. d-Limonene is readily absorbed by inhalation and ingest Limonene is readily distributed to different tissues in the exhibits low acute toxicity by all three routes in animals. Adverse reactions to fragrances in perfumes and in fragi photosensitivity, immediate contact reactions (contact ur occur. Intolerance to perfumes, by inhalation, may occur coughing, phlegm, wheezing, chest-tightness, headache (including asthma). Fragrance allergens act as haptens, protein. However, not all sensitising fragrance chemicals is non- or low-sensitising, but that is transformed into a fra and without the requirement of specific enzymatic syster In the case of prehaptens, it is possible to prevent activa exposure during handling and storage of the ingredients A member or analogue of a group of of aliphatic and ard self-limiting properties as flavouring substances in for animals; their low level of flavour use; the wide margir effect levels determined from subchronic and chronic stu Consumers are exposed to aliphatic terpene hydrocarbons in components of traditional food . Oral LD50 values have Tumorigenic by RTECS criteria	a group and may not be specific to t eczema, more rarely as urticaria ne reaction of the delayed type. O ion. Dermal absorption is reported body, readily metabolised and eli ranced cosmetic products include ticaria), and pigmented contact de if the perfume contains a sensitis e, exertional dyspnoea, acute resp i.e. low molecular weight chemica s are directly reactive, but require napten outside the skin by simple ms. ation outside the body to a certain and the final product, and by the pmatic terpene hydrocarbons gene od; their rapid absorption, metab to of safety between the conserve dies and the lack of significant ge earbons from a variety of ingested the group demonstrate that their been reported for 16 of the 17 sub	b this product. or Quincke's oedema. The pathogenesis of contact ther allergic skin reactions, e.g. contact urticaria, involve I to be lower than by the inhalation route. d- minated primarily through the urine. Limonene allergic contact dermatitis, irritant contact dermatitis, ermatitis. Airborne and connubial contact dermatitis ing principal. Symptoms may vary from general illness, iratory illness, hayfever, and other respiratory diseases als that are immunogenic only when attached to a carrier previous activation. A <b>prehapten</b> is a chemical that itself chemical transformation (air oxidation, photoactivation) extent by different measures, e.g. prevention of air addition of suitable antioxidants. rrally considered as safe (GRAS) based, in part, on their iolic detoxication, and excretion in humans and other ative estimates of intake and the no-observed-adverse notoxic potential. and environmental source. Quantitative natural consumption occurs predominantly as natural bistances in this group.
ISOPROPANOL	Isopropanol is irritating to the eyes, nose and throat but of the central nervous system and drowsiness. Few have	generally not to the skin. Prolonge e reported skin irritation. It can be	ed high dose exposure may also produce depression absorbed from the skin or when inhaled.
LACTIC ACID	for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest t Cells from the respiratory tract have not been examined exposure to inhaled acidic mists, just as mucous plays a acid. In considering whether pH itself induces genotoxic stomach, in which gastric juice may be at pH 1-2 under f urine can range from <5 to > 7 and normally averages 6 The toxicology of simple alpha hydroxy carboxylic acids cluster name Experimental data available for members reproductive and developmental toxicity. The simple alpha hydroxy carboxylic acids are eye and s Genotoxicity test data for two cluster members and a ca results and all other cluster members are considered to Acute oral toxicity of propanoic acid, 2-hydroxy- (2S)- (7 The material may cause severe skin irritation after prolor production of vesicles, scaling and thickening of the skin Asthma-like symptoms may continue for months or ever condition known as reactive airways dysfunction syndror compound. Key criteria for the diagnosis of RADS includo onset of persistent asthma-like symptoms within minutes spirometry, with the presence of moderate to severe bro lymphocytic inflammation, without eosinophilia, have als	hat eukaryotic cells are susceptibl in this respect. Mucous secretion in important role in protecting the events in vivo in the respiratory sy fasting or nocturnal conditions, an .2. for simple alpha-hydroxy carbo cluster is characterised by five of of the simple alpha-hydroxy car skin irritants but are not expected neer bioassay for the calcium salt have little or no mutagenic or carc 9-33-4) and propanoic acid, 2-hyd nged or repeated exposure and m . Repeated exposures may produ a years after exposure to the mate me (RADS) which can occur follow le the absence of preceding respin s to hours of a documented expos nchial hyperreactivity on methach o been included in the criteria for	e to genetic damage when the pH falls to about 6.5. may protect the cells of the airways from direct gastric epithelium from its auto-secreted hydrochloric rstem, comparison should be made with the human d with the human urinary bladder, in which the pH of xylic acids and their salts: ompounds sharing the functional group defining the boxylic acids indicate a low acute, repeated-dose, to be skin sensitisers. of propanoic acid, 2-hydroxy- yielded negative inogenic potential. roxy- (50-21-5) are low. ay produce on contact skin redness, swelling, the ce severe ulceration. rial ceases. This may be due to a non-allergenic ving exposure to high levels of highly irritating ratory disease, in a non-atopic individual, with abrupt ure to the irritant. A reversible airflow pattern, on oline challenge testing and the lack of minimal diagnosis of RADS.
ETHYLENE GLYCOL MONOBUTYL ETHER & LACTIC ACID	The material may produce severe irritation to the eye ca may produce conjunctivitis.	using pronounced inflammation. F	Repeated or prolonged exposure to irritants
ETHYLENE GLYCOL MONOBUTYL ETHER & ISOPROPANOL	The material may cause skin irritation after prolonged or production of vesicles, scaling and thickening of the skin	repeated exposure and may proc	luce on contact skin redness, swelling, the
D-LIMONENE & ISOPROPANOL	The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limite	d in animal testing.	
Aquita Taviaite	<b>S</b>	Coroinononialte	0
Acute Loxicity	<b>v</b>	Carcinogenicity	0
Skin infitation/Corrosion Serious Eve		Reproductivity	
Damage/Irritation	×	STOT - Single Exposure	•
sensitisation	×	STOT - Repeated Exposure	2
Mutagenicity	0	Aspiration Hazard	0

Legend:

Data available but does not fill the criteria for classification
 Data required to make classification available

Continued...

S Data Not Available to make classification

#### **SECTION 12 ECOLOGICAL INFORMATION**

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
ethylene glycol monobutyl ether	EC50	384	Crustacea	51.539mg/L	3
ethylene glycol monobutyl ether	LC50	96	Fish	222.042mg/L	3
ethylene glycol monobutyl ether	EC50	48	Crustacea	164mg/L	2
ethylene glycol monobutyl ether	NOEC	168	Crustacea	56mg/L	2
ethylene glycol monobutyl ether	EC50	96	Algae or other aquatic plants	720mg/L	2
d-limonene	EC50	384	Crustacea	0.051mg/L	3
d-limonene	EC50	96	Algae or other aquatic plants	0.212mg/L	3
d-limonene	LC50	96	Fish	0.199mg/L	3
d-limonene	EC50	48	Crustacea	0.36mg/L	2
d-limonene	NOEC	48	Crustacea	0.074mg/L	2
isopropanol	EC50	384	Crustacea	42.389mg/L	3
isopropanol	EC50	96	Algae or other aquatic plants	993.232mg/L	3
isopropanol	LC50	96	Fish	183.844mg/L	3
isopropanol	NOEC	5760	Fish	0.02mg/L	4
isopropanol	EC50	48	Crustacea	12500mg/L	5
lactic acid	LC50	96	Fish	38.00596mg/L	3
lactic acid	EC50	48	Crustacea	130mg/L	2
lactic acid	EC50	48	Crustacea	250mg/L	2
lactic acid	NOEC	48	Crustacea	180mg/L	2
lactic acid	EC50	72	Algae or other aquatic plants	>2800.0mg/L	2

Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. DO NOT discharge into sewer or waterways.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ethylene glycol monobutyl ether	LOW (Half-life = 56 days)	LOW (Half-life = 1.37 days)
d-limonene	HIGH	HIGH
isopropanol	LOW (Half-life = 14 days)	LOW (Half-life = 3 days)
lactic acid	LOW	LOW

#### **Bioaccumulative potential**

Ingredient	Bioaccumulation
ethylene glycol monobutyl ether	LOW (BCF = 2.51)
d-limonene	HIGH (LogKOW = 4.8275)
isopropanol	LOW (LogKOW = 0.05)
lactic acid	LOW (LogKOW = -0.72)

#### Mobility in soil

Ingredient	Mobility
ethylene glycol monobutyl ether	HIGH (KOC = 1)
d-limonene	LOW (KOC = 1324)
isopropanol	HIGH (KOC = 1.06)
lactic acid	HIGH (KOC = 1)

## SECTION 13 DISPOSAL CONSIDERATIONS

 Product / Packaging disposal

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

 Image: Consult State Constate Constate Constate Consult State Consult State Consult State

## **SECTION 14 TRANSPORT INFORMATION**

#### Labels Required

	RANKARE 3
Marine Pollutant	
HAZCHEM	•3YE

## Land transport (ADG)

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains isopropanol)
Transport hazard class(es)	Class     3       Subrisk     Not Applicable
Packing group	ll
Environmental hazard	Not Applicable
Special precautions for user	Special provisions     274       Limited quantity     1 L

## Air transport (ICAO-IATA / DGR)

-	- ,	
UN number	1993	
UN proper shipping name	Flammable liquid, n.o.s. * (contains isopropanol)	
Transport hazard class(es)	ICAO/IATA Class 3 ICAO / IATA Subrisk Not Applicable ERG Code 3H	
Packing group	П	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions Cargo Only Packing Instructions Cargo Only Maximum Qty / Pack Passenger and Cargo Packing Instructions Passenger and Cargo Maximum Qty / Pack Passenger and Cargo Limited Quantity Packing Instructions Passenger and Cargo Limited Maximum Qty / Pack	A3 364 60 L 353 5 L Y341 1 L

#### Sea transport (IMDG-Code / GGVSee)

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains isopropanol)
Transport hazard class(es)	IMDG Class     3       IMDG Subrisk     Not Applicable
Packing group	I
Environmental hazard	Marine Pollutant
Special precautions for user	EMS Number F-E, S-E
	Limited Quantities 1 L

## SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture		
ETHYLENE GLYCOL MONOBUTYL ETHER(111-76-2) IS FOUND ON THE FOLLOWING	REGULATORY LISTS	
Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)	
Australia Hazardous Substances Information System - Consolidated Lists	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	
D-LIMONENE(5989-27-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS		
Australia Hazardous Substances Information System - Consolidated Lists	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	
Australia Inventory of Chemical Substances (AICS)	Monographs	
ISOPROPANOL(67-63-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS		
Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)	
Australia Hazardous Substances Information System - Consolidated Lists	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	

## LACTIC ACID(50-21-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Υ
Canada - NDSL	N (lactic acid; d-limonene; isopropanol; ethylene glycol monobutyl ether)
China - IECSC	Υ
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Υ
Korea - KECI	Υ
New Zealand - NZIoC	Υ
Philippines - PICCS	Υ
USA - TSCA	Υ
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

#### **SECTION 16 OTHER INFORMATION**

#### Other information

#### Ingredients with multiple cas numbers

Name	CAS No
d-limonene	5989-27-5, 138-86-3
lactic acid	50-21-5, 598-82-3, 79-33-4, 10326-41-7

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

The 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.

#### Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average PC – STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit, IDLH: Immediately Dangerous to Life or Health Concentrations OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index