



Chain Cleaner True BiO Spray GRiTT by Leatt

Part Number:
Version No: **1.5**
Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Chemwatch Hazard Alert Code: **3**

Initial Date: **04/03/2026**
Revision Date: **18/04/2026**
Print Date: **18/04/2026**
S.GHS.AUS.EN

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

Product Identifier

Product name	Chain Cleaner True BiO Spray GRiTT by Leatt
Synonyms	Not Available
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Cleaning agent
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Details of the manufacturer or importer of the safety data sheet

Registered company name	Bike Corp.
Address	Moorabin Airport, Victoria Australia 3194, AUSTRALIA
Telephone	+61 3 9518 5400
Fax	Not Available
Website	bikecorp.com.au
Email	sales@bikecorp.com.au

Emergency telephone number

Association / Organisation	Poisons Information Centre
Emergency telephone number(s)	131 126
Other emergency telephone number(s)	Chemwatch 1800 951 288

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	2
Toxicity	0	1
Body Contact	2	3
Reactivity	1	2
Chronic	3	4

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable
Classification ^[1]	Serious Eye Damage/Eye Irritation Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
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SIGNAL WORD **DANGER**

Hazard statement(s)

H318	Causes serious eye damage.
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Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
Precautionary statement(s) Response	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
Precautionary statement(s) Storage	
Not Applicable	
Precautionary statement(s) Disposal	
Not Applicable	
No further product hazard information.	

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances		
See section below for composition of Mixtures		
Mixtures		
CAS No	%[weight]	Name
160901-19-9	< 5	alcohols C12-13, branched and linear, ethoxylated
1554325-20-0	< 5	C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated
112-34-5	< 5	diethylene glycol monobutyl ether
5131-66-8	< 5	propylene glycol monobutyl ether - alpha isomer
122-99-6	< 1	ethylene glycol phenyl ether
Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available		

SECTION 4 FIRST AID MEASURES

Description of first aid measures	
Eye Contact	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 Contact	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.
Inhalation	• If fumes, aerosols or combustion products are inhaled remove from contaminated area. • Other measures are usually unnecessary.
Ingestion	• Immediately give a glass of water. • First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Indication of any immediate medical attention and special treatment needed	
Treat symptomatically.	

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media	
• Foam. • Dry chemical powder. • BCF (where regulations permit). • Carbon dioxide. • Water spray or fog - Large fires only.	
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	• Alert Fire Brigade and tell them location and nature of hazard. • Wear full body protective clothing with breathing apparatus. • Prevent, by any means available, spillage from entering drains or water course. • Use water delivered as a fine spray to control fire and cool adjacent area. • 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.

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Fire/Explosion Hazard	• Combustible. • Slight fire hazard when exposed to heat or flame. • Heating may cause expansion or decomposition leading to violent rupture of containers. • On combustion, may emit toxic fumes of carbon monoxide (CO). • May emit acrid smoke. • Mists containing combustible materials may be explosive. Combustion products include: • carbon dioxide (CO2) • other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
HAZCHEM	Not Applicable

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	Environmental hazard - contain spillage. • Remove all ignition sources. • Clean up all spills immediately. • Avoid breathing vapours and contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Contain and absorb spill with sand, earth, inert material or vermiculite. • Wipe up. • Place in a suitable, labelled container for waste disposal.
Major Spills	Environmental hazard - contain spillage. Moderate hazard. • Clear area of personnel and move upwind. • Alert Fire Brigade and tell them location and nature of hazard. • Wear breathing apparatus plus protective gloves. • Prevent, by any means available, spillage from entering drains or water course. • No smoking, naked lights or ignition sources. • Increase ventilation. • Stop leak if safe to do so. • Contain spill with sand, earth or vermiculite. • 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.

Reference to other sections

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	• Avoid skin contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Prevent concentration in hollows and sumps. • DO NOT enter confined spaces until atmosphere has been checked. • Avoid smoking, naked lights or ignition sources. • Avoid contact with incompatible materials. • When handling, DO NOT eat, drink or smoke. • Keep containers securely sealed when not in use. • 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 storage and handling recommendations contained within this SDS. • 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
Other information	• Store in original containers. • Keep containers securely sealed. • No smoking, naked lights or ignition sources. • Store in a cool, dry, well-ventilated area. • Store away from incompatible materials and foodstuff containers. • Protect containers against physical damage and check regularly for leaks. • Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	• Glass container is suitable for laboratory quantities • Metal can or drum • Packaging as recommended by manufacturer. • Check all containers are clearly labelled and free from leaks.
Storage incompatibility	• Avoid reaction with oxidising agents

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+


x


o


x


+


+


+

x – Must not be stored together
o – May be stored together with specific preventions
+ – May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Workplace exposure limits for airborne contaminants (WEL list) (Effective from 1 Dec ember 2026) - Appendix A - Workplace Exposure Limits	diethylene glycol monob utyl ether	Diethylene glycol monob utyl ether	10 ppm / 67.5 mg/ m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
diethylene glycol monobutyl eth er	30 ppm	33 ppm	200 ppm
ethylene glycol phenyl ether	1.5 ppm	16 ppm	97 ppm

OCCUPATIONAL EXPOSURE BANDING

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
alcohols C12-13, branched and linear, ethoxylated	E	≤ 0.1 ppm
C12-14-alkyl(hydroxyethyl)dime thyl chloride, ethoxylated	E	≤ 0.01 mg/m³
propylene glycol monobutyl eth er - alpha isomer	C	> 1 to ≤ 10 parts per million (ppm)
ethylene glycol phenyl ether	E	≤ 0.1 ppm
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

Exposure controls

Appropriate engineering controls

Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation. HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours. Barrier protection or laminar flow cabinets should be considered for laboratory scale handling. A fume hood or vented balance enclosure is recommended for weighing/ transferring quantities exceeding 500 mg. When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6-12 air changes per hour) is preferred. Quantities up to 1 kilogram may require a designated laboratory using fume hood, biological safety cabinet, or approved vented enclosures. Quantities exceeding 1 kilogram should be handled in a designated laboratory or containment laboratory using appropriate barrier/ containment technology. Manufacturing and pilot plant operations require barrier/ containment and direct coupling technologies. Barrier/ containment technology and direct coupling (totally enclosed processes that create a barrier between the equipment and the room) typically use double or split butterfly valves and hybrid unidirectional airflow/ local exhaust ventilation solutions (e.g. powder containment booths). Glove bags, isolator glove box systems are optional. HEPA filtration of exhaust from dry product handling areas is required. Fume-hoods and other open-face containment devices are acceptable when face velocities of at least 1 m/s (200 feet/minute) are achieved. Partitions, barriers, and other partial containment technologies are required to prevent migration of the material to uncontrolled areas. For non-routine emergencies maximum local and general exhaust are necessary. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, etc. evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

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	Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2.5 m/s (200-500 f/min.) for extraction of gases discharged 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. The need for respiratory protection should also be assessed where incidental or accidental exposure is anticipated: Dependent on levels of contamination, PAPR, full face air purifying devices with P2 or P3 filters or air supplied respirators should be evaluated. The following protective devices are recommended where exposures exceed the recommended exposure control guidelines by factors of: 10; high efficiency particulate (HEPA) filters or cartridges 10-25; loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator. 25-50; a full face-piece negative pressure respirator with HEPA filters 50-100; tight-fitting, full face-piece HEPA PAPR 100-1000; a hood-shroud HEPA PAPR or full face-piece supplied air respirator operated in pressure demand or other positive pressure mode.
Individual protection measures, such as personal protective equipment	
Eye and face protection	When handling very small quantities of the material eye protection may not be required. For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs: - Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] - Face shield. Full face shield may be required for supplementary but never for primary protection of eyes. - Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses 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].
Skin protection	See Hand protection below
Hands/feet protection	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. 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. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: - frequency and duration of contact, - chemical resistance of glove material, - glove thickness and - dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). - When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. - Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. - Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: - Excellent when breakthrough time > 480 min - Good when breakthrough time > 20 min - Fair when breakthrough time < 20 min - Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: - Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. - Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. - Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference. - Double gloving should be considered. - PVC gloves. - Change gloves frequently and when contaminated, punctured or torn. - Wash hands immediately after removing gloves. - Protective shoe covers. [AS/NZS 2210] - Head covering.
Body protection	See Other protection below
Other protection	- For quantities up to 500 grams a laboratory coat may be suitable. - For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs. - For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers. - For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection. - Eye wash unit. - Ensure there is ready access to an emergency shower. - For Emergencies: Vinyl suit

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:

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Material	CPI
PVA	A
BUTYL	C
NATURAL RUBBER	C
NITRILE	C
PE/EVAL/PE	C
VITON	C

* 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.

Type A-P 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 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - 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.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Red		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Characteristic	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	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)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Heat of Combustion (kJ/g)	Not Available	Ignition Distance (cm)	Not Available
Flame Height (cm)	Not Available	Flame Duration (s)	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	Enclosed Space Ignition Deflagration Density (g/m3)	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	• Unstable in the presence of incompatible materials. • Product is considered stable. • Hazardous polymerisation will not occur.
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

a) Acute Toxicity	Based on available data, the classification criteria are not met.
b) Skin Irritation/Corrosion	Based on available data, the classification criteria are not met.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	Based on available data, the classification criteria are not met.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	Based on available data, the classification criteria are not met.
i) STOT - Repeated Exposure	Based on available data, the classification criteria are not met.
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	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. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
Eye	If applied to the eyes, this material causes severe eye damage.
Chronic	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. The material may inhibit protein kinase. This may suppress cell or tissue growth or development.

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	Not Available	Not Available
alcohols C12-13, branched and linear, ethoxylated	TOXICITY	IRRITATION
	Oral (Rabbit) LD50: 2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated	TOXICITY	IRRITATION
	Oral (Rat) LD50: >300 mg/kg ^[2]	Not Available
diethylene glycol monobutyl ether	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 4120 mg/kg ^[2]	Eye (Rodent - rabbit): 20mg - Severe
	Oral (Rat) LD50: 5660 mg/kg ^[2]	Eye (Rodent - rabbit): 20mg/24H - Moderate
		Eye: adverse effect observed (irritating) ^[1]
propylene glycol monobutyl ether - alpha isomer	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50: >2000 mg/kg ^[1]	Skin: adverse effect observed (irritating) ^[1]
ethylene glycol phenyl ether	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (Rodent - rabbit): 250ug/24H - Severe
	Oral (Rat) LD50: 1260 mg/kg ^[2]	Eye (Rodent - rabbit): 6mg - Moderate
		Eye: adverse effect observed (irreversible damage) ^[1]
		Eye: adverse effect observed (irritating) ^[1]
		Skin (Rodent - rabbit): 500mg/24H - Mild
		Skin: adverse effect observed (irritating) ^[1]
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

diethylene glycol monobutyl ether	This category includes diethylene glycol ethyl ether (DGEE), diethylene glycol propyl ether (DGPE) diethylene glycol butyl ether (DGBE) and diethylene glycol hexyl ether (DGHE) and their acetates. Studies show that they can cause kidney and liver damage, skin and eye irritation as well as blood changes but do not cause damage to the reproductive, genetic and developmental abnormalities, sensitisation or respiratory systems. However, DGEE is reported to cause sperm insufficiency.
propylene glycol monobutyl ether - alpha isomer	For propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA) and tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. The common toxicities associated with the lower molecular weight homologues of the ethylene series, such as adverse effects on the reproductive organs, the developing embryo and foetus, blood or thymus gland, are not seen with the commercial-grade propylene glycol ethers. In the ethylene series, metabolism of the terminal hydroxyl group produces and alkoxyacetic acid. The reproductive and developmental toxicities of the lower molecular weight homologues in the ethylene series are due specifically to the formation of methoxyacetic and ethoxyacetic acids.

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	Longer chain homologues in the ethylene series are not associated with reproductive toxicity, but can cause haemolysis in sensitive species, also through formation of an alkoxyacetic acid. The predominant alpha isomer of all the PGEs (which is thermodynamically favoured during manufacture of PGEs) is a secondary alcohol incapable of forming an alkoxypropionic acid. In contrast, beta-isomers are able to form the alkoxypropionic acids and these are linked to birth defects (and possibly, haemolytic effects). The alpha isomer comprises more than 95% of the isomeric mixture in the commercial product, and therefore PGEs show relatively little toxicity. One of the main metabolites of the propylene glycol ethers is propylene glycol, which is of low toxicity and completely metabolized in the body. As a class, PGEs have low acute toxicity via swallowing, skin exposure and inhalation. PnB and TPM are moderately irritating to the eyes, in animal testing, while the remaining members of this category caused little or no eye irritation. None caused skin sensitization. Animal testing showed that repeat dosing caused few adverse effects. Animal testing also shows that PGEs do not cause skin effects or reproductive toxicity. Commercially available PGEs have not been shown to cause birth defects. Available instance indicates that propylene glycol ethers are unlikely to possess genetic toxicity.
alcohols C12-13, branched and linear, ethoxylated	data for for Neodol 23-6.5 linear ethoxylates Humans have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents and other cleaning products. Exposure to these chemicals can occur through swallowing, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that relatively high volumes would have to occur to produce any toxic response. No death due to poisoning with alcohol ethoxylates has ever been reported. Studies show that alcohol ethoxylates have low toxicity through swallowing and skin contact. Animal studies show these chemicals may produce gastrointestinal irritation, stomach ulcers, hair standing up, diarrhea and lethargy. Slight to severe irritation occurred when undiluted alcohol ethoxylates were applied to the skin and eyes of animals. These chemicals show no indication of genetic toxicity or potential to cause mutations and cancers. Toxicity is thought to be substantially lower than that of nonylphenol ethoxylates. Some of the oxidation products of this group of substances may have sensitizing properties. As they cause less irritation, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their tendency to auto-oxidise also increases their irritation. Due to their irritating effect it is difficult to diagnose allergic contact dermatitis (ACD) by patch testing. Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed.
C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated	* SDS for Berol R648 NG (70% aqueous solution) There is no data that exists regarding the health effects of cationic dialkyldimethylammonium (DADMA) salts, but they are expected to have similar properties to alkyltrimethylammonium (ATMA) salts, although they are generally less irritating than the corresponding ATMA salts Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products. Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitizers. The oxidation products also cause irritation. For alkyltrimethylammonium chloride (ATMAC) Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41. In addition, certain surfactants will satisfy the criteria for classification as Corrosive with R34 in addition to the acute toxicity. According to Centre Europeen des Agents de Surface et de leurs Intermediaires Organiques (CESIO), C8-18 alkyltrimethylammonium chloride (ATMAC) (i.e., lauryl, coco, soya, and tallow) are classified as Corrosive (C) with the risk phrases R22 (Harmful if swallowed) and R34 (Causes burns). C16 ATMAC is classified as Harmful (Xn) with the risk phrases R22 (Harmful if swallowed), R38 (Irritating to skin), and R41 (Risk of serious damage to eyes). C20-22 ATMAC are classified as Irritant (Xi) with R36/38 (Irritating to eyes and skin). Acute toxicity: ATMAB (the bromide) is poorly absorbed through the skin or the digestive tract. Acute oral toxicity of alkyltrimethylammonium salts is somewhat higher than the toxicity of anionic and nonionic surfactants. This may be due to the strongly irritating effect which cationic surfactants have on the mucous membrane of the gastrointestinal tract. Cationic surfactants are generally about 10 times more toxic when given through a vein, compared to being given by mouth. Skin and eye irritation: Skin irritation depends on surfactant concentration. Concentrations above 1% generally cause pronounced irritation. Cationic surfactants are the most irritating surfactants to the eye. Many proteins in the skin are considerably more resistant to the denaturing effects of cationic surfactants compared to those of anionic surfactants. In contrast to the irreversible denaturing effect of sodium dodecyl sulfate, the adverse effects of some cationic surfactants on proteins may be reversible. Sensitisation: A repeated patch test performed on human volunteers did not show sensitization. Sub-chronic toxicity: Animal testing over the long term resulted in no effects, except for reduced body weight at very high doses. Reproductive toxicity: Animal testing showed no effects toxic to the embryo or causing birth defects. Mild effects on the embryo were seen only at levels which were toxic to the mother. Mutation-causing potential: Animal testing showed no mutation-causing potential for C16 and C18 ATMAC. For quaternary ammonium compounds (QACs): Quaternary ammonium compounds (QACs) are cationic surfactants. They are in general more toxic than anionic and non-ionic surfactants. Because they can dissolve phospholipids and cholesterol in lipid membranes, QACs affect cell permeability which may lead to cell death. Further, QACs denature proteins as cationic materials precipitate protein and are accompanied by generalized tissue irritation. It has been suggested that the experimentally determined decrease in the acute toxicity of QAs with chain length above C16 is due to decreased water solubility. In general it appears that QACs with single long-chain alkyl groups are more toxic and irritating than those with two such substitutions. Animal testing shows that straight chain aliphatic QACs may cause lung tissue to release histamine. QACs may also show curare-like properties, causing limb paralysis and even life-threatening paralysis of the muscles of breathing, if they are injected. This paralysis seems to be transient. From human testing, it is concluded that all the compounds investigated to date show similar toxicological properties.
ethylene glycol phenyl ether	Bacterial cell mutagen The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing. At concentrations likely to be encountered by consumers, AAA fragrance ingredients are non-irritating to the skin. The potential for eye irritation is minimal. With the exception of benzyl alcohol, phenethyl and 2-phenoxyethyl AAA alcohols, testing in humans indicate that AAA fragrance ingredients generally have no or low sensitization potential. Available data indicate that the potential for photosensitization is low. Testing suggests that at current human exposure levels, this group of chemicals does not cause maternal or developmental toxicity. Animal testing shows no cancer-causing evidence, with little or no genetic toxicity. It has been concluded that these materials would not present a safety concern at current levels of use, as fragrance ingredients. WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS. 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. For ethylene glycol monoalkyl ethers and their acetates (EGMAEs): Typical members of this category are ethylene glycol propylene ether (EGPE), ethylene glycol butyl ether (EGBE) and ethylene glycol hexyl ether (EGHE) and their acetates. EGMAEs are substrates for alcohol dehydrogenase isozyme ADH-3, which catalyzes the conversion of their terminal alcohols to aldehydes (which are transient metabolites). Further, rapid conversion of the aldehydes by aldehyde dehydrogenase produces alkoxyacetic acids, which are the predominant urinary metabolites of mono substituted glycol ethers. Acute Toxicity: Oral LD50 values in rats for all category members range from 739 (EGHE) to 3089 mg/kg bw (EGPE), with values increasing with decreasing molecular weight. Four to six hour acute inhalation toxicity studies were conducted for these chemicals in rats at the highest vapour concentrations practically achievable. Values range from LC0 > 85 ppm (508 mg/m3) for EGHE, LC50 > 400ppm (2620 mg/m3) for EGBEA to LC50 > 2132 ppm (9061 mg/m3) for EGPE. No lethality was observed for any of these materials under these conditions. Dermal LD50 values in rabbits range from 435 mg/kg bw (EGBE) to 1500 mg/kg bw (EGBEA). Overall these category members can be considered to be of low to moderate acute toxicity. All category members cause reversible irritation to skin and eyes, with EGBEA less irritating and EGHE more irritating than the other category members. EGPE and EGBE are not sensitizers in experimental animals or humans. Signs of acute toxicity in rats, mice and rabbits are consistent with haemolysis (with the exception of EGHE) and non-specific CNS depression typical of organic solvents in general. Alkoxyacetic acid metabolites, propoxyacetic acid (PAA) and butoxyacetic acid (BAA), are responsible for the red blood cell hemolysis. Signs of toxicity in humans deliberately ingesting cleaning fluids containing 9-22% EGBE are similar to those of rats, with the exception of haemolysis. Although decreased blood haemoglobin and/or haemoglobinuria were observed in

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	some of the human cases, it is not clear if this was due to haemolysis or haemodilution as a result of administration of large volumes of fluid. Red blood cells of humans are many-fold more resistant to toxicity from EGPE and EGBE <i>in vitro</i> than those of rats. Repeat dose toxicity: The fact that the NOAEL for repeated dose toxicity of EGBE is less than that of EGPE is consistent with red blood cells being more sensitive to EGBE than EGPE. Blood from mice, rats, hamsters, rabbits and baboons were sensitive to the effects of BAA <i>in vitro</i> and displayed similar responses, which included erythrocyte swelling (increased haematocrit and mean corpuscular hemoglobin), followed by hemolysis. Blood from humans, pigs, dogs, cats, and guinea pigs was less sensitive to haemolysis by BAA <i>in vitro</i>. Mutagenicity: In the absence and presence of metabolic activation, EGBE tested negative for mutagenicity in Ames tests conducted in <i>S. typhimurium</i> strains TA97, TA98, TA100, TA1535 and TA1537 and EGHE tested negative in strains TA98, TA100, TA1535, TA1537 and TA1538. <i>In vitro</i> cytogenetic and sister chromatid exchange assays with EGBE and EGHE in Chinese Hamster Ovary Cells with and without metabolic activation and <i>in vivo</i> micronucleus tests with EGBE in rats and mice were negative, indicating that these glycol ethers are not genotoxic. Carcinogenicity: In a 2-year inhalation chronic toxicity and carcinogenicity study with EGBE in rats and mice a significant increase in the incidence of liver haemangiosarcomas was seen in male mice and forestomach tumours in female mice. It was decided that based on the mode of action data available, there was no significant hazard for human carcinogenicity Reproductive and developmental toxicity. The results of reproductive and developmental toxicity studies indicate that the glycol ethers in this category are not selectively toxic to the reproductive system or developing fetus, developmental toxicity is secondary to maternal toxicity. The repeated dose toxicity studies in which reproductive organs were examined indicate that the members of this category are not associated with toxicity to reproductive organs (including the testes). Results of the developmental toxicity studies conducted via inhalation exposures during gestation periods on EGPE (rabbits -125, 250, 500 ppm or 531, 1062, or 2125 mg/m3 and rats - 100, 200, 300, 400 ppm or 425, 850, 1275, or 1700 mg/m3), EGBE (rat and rabbit - 25, 50, 100, 200 ppm or 121, 241, 483, or 966 mg/m3), and EGHE (rat and rabbit - 20.8, 41.4, 79.2 ppm or 124, 248, or 474 mg/m3) indicate that the members of the category are not teratogenic. The NOAELs for developmental toxicity are greater than 500 ppm or 2125 mg/m3 (rabbit-EGPE), 100 ppm or 425 mg/m3 (rat-EGPE), 50 ppm or 241 mg/m3 (rat EGBE) and 100 ppm or 483 mg/m3 (rabbit EGBE) and greater than 79.2 ppm or 474 mg/m3 (rat and rabbit-EGHE).		
C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated & ethylene glycol phenyl ether	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.		
alcohols C12-13, branched and linear, ethoxylated & diethylene glycol monobutyl ether & ethylene glycol phenyl ether	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.		
Chain Cleaner True BiO Spray GRITT by Leatt & ethylene glycol phenyl ether	too much activation of AMPK, or activating it in the wrong tissue, can cause serious side effects, including neurodegeneration, or preventing cells from dividing. The accumulation of naturally-occurring AICAR in the body is also associated with metabolic disorders in humans AICAR (5-aminoimidazole-4-carboxamide-1-β-D-ribofuranoside) is a substance produced naturally by the body that stimulates AMP activated protein kinase (AMPK) 5' monophosphate-activated protein kinase (AMPK) is an enzyme that is known as the body's "master regulator of energy metabolism AMPK i stored throughout tissues in the body, especially those in the brain (including the hypothalamus), liver, fat cells and skeletal muscles. Adenosine 5' monophosphate-activated protein kinase is influenced by a number of factors, including your genetics, age, diet, sleep patterns, stress levels and exercise habits. wen the hypothalamus senses that energy levels are low, adenosine 5' monophosphate-activated protein kinase is stimulated. Energy expenditure is decreased while appetite is increased since this helps you acquire more energy in the form of calories and use less on energy output. When cellular energy is high, the opposite typically happens. Your body responds by decreasing your appetite and increasing energy expenditure. This can include increased fidgeting, body temperature and sweating associated with movement. researchers believe that as we age, AMPK activity significantly decreases. This is one reason why we experience changes in appetite, body weight, energy levels, etc. Energy depletion (or a lack of cellular energy) is really what stimulates AMPK activity. This causes more of the protein activated protein kinase (AMP) to be produced. That means some of the best AMPK activators are thought of as beneficial "stressors." These include calorie restriction, fasting and intense exercise The body balances production of AMP by sensing its current AMP to adenosine triphosphate (ATP) ratio. ATP molecules are those that act as a source of fuel within cells. Energy starts as ATP within cells and eventually breaks down into AMP. natural AMPK activators can offer many benefits. These benefits include reducing inflammation, improving metabolic pathways and supporting healthy aging. AICAR (5-aminoimidazole-4-carboxamide-1-β-D-ribofuranoside) is a substance produced naturally by the body that stimulates AMP activated protein kinase (AMPK), a protein that regulates metabolism in a variety of ways. AMPK acts as an energy regulator and is activated during exercise or other circumstances that use up cellular energy AICAR is prohibited because it's an AMPK activator, which are prohibited at all times under the category of Hormone and Metabolic Modulators on the WADA Prohibited List because of their potential performance-enhancing effect Once activated by AICAR, AMPK works to make energy more available. For example, it increases the usage of fat for energy and causes cells to make more mitochondria (the cells' powerhouses or energy creators). AMPK basically ensures that the various tissues in the body don't run out of energy. There are many circumstances that activate AMPK naturally, including hypoxia (low oxygen levels during exercise or at elevation), hypoglycemia (low blood sugar with exercise or fasting), the use of cellular energy during muscle contraction, and anything that disrupts energy creation within cells. Studies suggest that adenosine 5' monophosphate-activated protein kinase can help stimulate fat-burning and weight loss under certain conditions. It helps muscles use more glucose for energy, controls appetite and increases the amount of energy spent on physical activity. Homeostasis controlled in part by AMPK activation can also lead to increased body temperature, reduced inflammation and improved hormone balance. All of those help you maintain a healthy weight. (4) This works in the opposite direction as well. For example, adenosine 5' monophosphate-activated protein kinase is tied to adequate thyroid hormone production. When T3 thyroid hormone production is increased, AMPK is activated in muscles. This enzyme has anti-inflammatory potential. It is shown to promote antioxidant activity, building defenses against factors that accelerate aging, such as a poor diet, chemical/toxin exposure and chronic stress. Studies show that adenosine 5' monophosphate-activated protein kinase increases the production of certain antioxidant proteins, including NRF2 and superoxide dismutase. AMPK signaling may also help prevent chronic conditions tied to inflammation, such as cardiovascular disease and diabetes, for several reasons. It can help decrease production of fatty acids, cholesterol, triglycerides and proteins. It's involved in fatty acid catabolism and stops fatty acid synthesis. This can have positive effects on metabolic/heart health ypothalamic AMPK is capable of increasing glucose production if it senses that cellular energy is low. Glucose is the body's preferred source of energy. It is used in high quantities by the brain. Adenosine 5' monophosphate-activated protein kinase can help prevent below-normal blood sugar levels, also called hypoglycemia. Hypoglycemia symptoms include dizziness, weakness, headaches, and fainting		
Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin	✗	STOT - Repeated Exposure	✗

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sensitisation		Aspiration Hazard	
Mutagenicity	✗		✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✔ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Chain Cleaner True BiO Spray GRITT by Leatt	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
alcohols C12-13, branched and linear, ethoxylated	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	0.179mg/l	2
	EC50	48h	Crustacea	0.238mg/l	2
	NOEC(ECx)	504h	Crustacea	0.012mg/l	2
	LC50	96h	Fish	1.8-3.2mg/l	2
C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48h	Crustacea	>1-10mg/l	Not Available
	EC50(ECx)	48h	Crustacea	>1-10mg/l	Not Available
	LC50	96h	Fish	>10-100mg/l	Not Available
diethylene glycol monobutyl ether	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	1101mg/l	2
	EC50	48h	Crustacea	>100mg/l	1
	NOEC(ECx)	96h	Algae or other aquatic plants	>=100mg/l	1
	EC50	96h	Algae or other aquatic plants	>100mg/l	1
	LC50	96h	Fish	1300mg/l	2
propylene glycol monobutyl ether - alpha isomer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	519mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	EC50	96h	Algae or other aquatic plants	525mg/l	2
	EC0(ECx)	48h	Crustacea	>100mg/l	2
	LC50	96h	Fish	>560<1000mg/l	2
ethylene glycol phenyl ether	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	460mg/l	2
	NOEC(ECx)	24h	Fish	5mg/l	2
	LC50	96h	Fish	154mg/l	2
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data				

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
diethylene glycol monobutyl ether	LOW	LOW
propylene glycol monobutyl ether - alpha isomer	LOW	LOW
ethylene glycol phenyl ether	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
diethylene glycol monobutyl ether	LOW (BCF = 0.46)
propylene glycol monobutyl ether - alpha isomer	LOW (LogKOW = 0.9842)
ethylene glycol phenyl ether	LOW (LogKOW = 1.16)

Mobility in soil

Ingredient	Mobility
diethylene glycol monobutyl ether	LOW (KOC = 10)
propylene glycol monobutyl ether - alpha isomer	HIGH (KOC = 1.289)
ethylene glycol phenyl ether	LOW (KOC = 12.12)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: • Reduction • Reuse • Recycling • Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. • DO NOT allow wash water from cleaning or process equipment to enter drains. • It may be necessary to collect all wash water for treatment before disposal. • In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. • Where in doubt contact the responsible authority. • 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.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
alcohols C12-13, branched and linear, ethoxylated	Not Applicable
C12-14-alkyl(hydroxyethyl)dime thyl chloride, ethoxylated	Not Applicable
diethylene glycol monobutyl ether	Not Applicable
propylene glycol monobutyl ether - alpha isomer	Not Applicable
ethylene glycol phenyl ether	Not Applicable

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
alcohols C12-13, branched and linear, ethoxylated	Not Applicable
C12-14-alkyl(hydroxyethyl)dime thyl chloride, ethoxylated	Not Applicable
diethylene glycol monobutyl ether	Not Applicable
propylene glycol monobutyl ether - alpha isomer	Not Applicable
ethylene glycol phenyl ether	Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

- ALCOHOLS C12-13, BRANCHED AND LINEAR, ETHOXYLATED IS FOUND ON THE FOLLOWING REGULATORY LISTS
 - Not Applicable
- C12-14-ALKYL(HYDROXYETHYL)DIMETHYL CHLORIDE, ETHOXYLATED IS FOUND ON THE FOLLOWING REGULATORY LISTS
 - Not Applicable
- DIETHYLENE GLYCOL MONOBUTYL ETHER IS FOUND ON THE FOLLOWING REGULATORY LISTS
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
 - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
- PROPYLENE GLYCOL MONOBUTYL ETHER - ALPHA ISOMER IS FOUND ON THE FOLLOWING REGULATORY LISTS
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- ETHYLENE GLYCOL PHENYL ETHER IS FOUND ON THE FOLLOWING REGULATORY LISTS
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
 - Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Additional Regulatory Information

Not Applicable

Additional State Regulatory Information

Not Available

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Canada - DSL	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Canada - NDSL	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated, diethylene glycol monobutyl ether, propylene glycol monobutyl ether - alpha isomer, ethylene glycol phenyl ether)
China - IECSC	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Columbia - Columbia National Industrial Chemicals Inventory	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated, diethylene glycol monobutyl ether, propylene glycol monobutyl ether - alpha isomer, ethylene glycol phenyl ether)
Europe - EINEC / ELINCS / NLP	No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Japan - ENCS	No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Korea - KECI	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
New Zealand - NZIoC	Yes
Philippines - PICCS	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
USA - TSCA	TSCA Inventory 'Active' substance(s) (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated, diethylene glycol monobutyl ether, propylene glycol monobutyl ether - alpha isomer, ethylene glycol phenyl ether); No (alcohols C12-13, branched and linear, ethoxylated)
Taiwan - TCSI	No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Mexico - INSQ	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Vietnam - NCI	No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
Russia - FBEPH	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)
UAE - Control List (Banned/Restricted Substances)	No (alcohols C12-13, branched and linear, ethoxylated, C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated, diethylene glycol monobutyl ether, propylene glycol monobutyl ether - alpha isomer, ethylene glycol phenyl ether)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 OTHER INFORMATION

Revision Date	18/04/2026
Initial Date	04/03/2026

Other information

Continued...

Ingredients with multiple cas numbers

Name	CAS No
C12-14-alkyl(hydroxyethyl)dime thyl chloride, ethoxylated	1554325-20-0, 863479-20-3
ethylene glycol phenyl ether	122-99-6, 37220-49-8, 134367-25-2, 18249-17-7, 200260-63-5, 79586-53-1, 9004-78-8, 56257-90-0, 1219804-65-5

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
- ES: Exposure Standard
- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code
- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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