



JTC IMPORT/EXPORT P/L

Lucky Super Soft True Hair Color #10 Natural Black

JTC Import Export Pty Ltd

Chemwatch: 7956-51

Version No: 2.1

Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 16/05/2025

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S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Lucky Super Soft True Hair Color #10 Natural Black
Chemical Name	Not Applicable
Synonyms	Product Code: 82415, 82417, 82418, 82419, 82420, 82421, 82416 Lucky Super Soft True Hair Color #10 Natural Black, #30 Dark Brown, #40 Light Brown, #50 Medium Auburn, #70 Dark Blonde, #90 Light Blonde, #20 Blue Black; Lucky Super Soft Hair Color #30 Dark Brown; Lucky Super Soft Hair Color #40 Light Brown; Lucky Super Soft Hair Color #50 Medium Auburn; Lucky Super Soft Hair Color #70 Dark Blonde; Lucky Super Soft Hair Color #90 Light Blonde; Lucky Super Soft Hair Color #20 Blue Black
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains ethanol)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Cosmetic use. Use according to manufacturer's directions. SDS are intended for use in the workplace ONLY. For domestic-use products, refer to consumer labels.
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Details of the manufacturer or importer of the safety data sheet

Registered company name	JTC Import Export Pty Ltd
Address	98-126 South Park Drive Dandenong South VIC 3175 Australia
Telephone	+61 3 9532 5100
Fax	+61 3 9532 6102
Website	https://www.jtcimportexport.com.au
Email	sales@jtcimportexport.com.au

Emergency telephone number

Association / Organisation	JTC Import Export Pty Ltd	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone number(s)	+61 3 9532 5100 (Mon-Thurs 8.30am to 5.30pm; Friday 8.30am to 3pm)	+61 1800 951 288 (ID#: 7956-51)
Other emergency telephone number(s)	Not Available	+61 3 9573 3188

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification ^[1]	Flammable Liquids Category 3, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2
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)	
Signal word	Danger

Hazard statement(s)

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H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.
AUH031	Contact with acid liberates toxic gas.

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

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.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P330	Rinse mouth.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
67762-27-0	10-15	<u>cetostearyl alcohol</u>
68439-49-6	2-5	<u>alcohols C16-18 ethoxylated</u>
141-43-5	1-2	<u>ethanolamine</u>
112-03-8	1-2	<u>octadecyltrimethylammonium chloride</u>
106-50-3	1-2	<u>p-phenylenediamine</u>
31566-31-1	1-2	<u>glyceryl monostearate</u>
615-50-9	1-2	<u>2,5-diaminotoluene sulfate</u>
57-55-6	0.1-1	<u>propylene glycol</u>
108-46-3	0.1-1	<u>resorcinol</u>
64-17-5	0.1-1	<u>ethanol</u>
139-33-3	0.1-0.5	<u>EDTA disodium salt</u>
7757-83-7	0.1-0.5	<u>sodium sulfite</u>
591-27-5	0.1-0.5	<u>m-aminophenol</u>
1336-21-6	0.1-0.5	<u>ammonia</u>
6381-77-7	0.1-0.5	<u>sodium erythorbate</u>
54381-16-7	0.1-0.5	<u>N,N-bis(hydroxyethyl)-p-phenylenediamine] sulfate</u>
66422-95-5	0.1-0.5	<u>2-(2,4-diaminophenoxy)ethanol dihydrochloride</u>

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CAS No	%[weight]	Name
124-28-7	0.01-0.1	<u>N,N-dimethyloctadecylamine</u>
110-98-5	0.001-0.01	<u>1,1'-oxydi-2-propanol</u>
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. For thermal burns: ▶ Decontaminate area around burn. ▶ Consider the use of cold packs and topical antibiotics. For first-degree burns (affecting top layer of skin) ▶ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides. ▶ Use compresses if running water is not available. ▶ Cover with sterile non-adhesive bandage or clean cloth. ▶ Do NOT apply butter or ointments; this may cause infection. ▶ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur. For second-degree burns (affecting top two layers of skin) ▶ Cool the burn by immerse in cold running water for 10-15 minutes. ▶ Use compresses if running water is not available. ▶ Do NOT apply ice as this may lower body temperature and cause further damage. ▶ Do NOT break blisters or apply butter or ointments; this may cause infection. ▶ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape. To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort): ▶ Lay the person flat. ▶ Elevate feet about 12 inches. ▶ Elevate burn area above heart level, if possible. ▶ Cover the person with coat or blanket. ▶ Seek medical assistance. For third-degree burns Seek immediate medical or emergency assistance. In the mean time: ▶ Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound. ▶ Separate burned toes and fingers with dry, sterile dressings. ▶ Do not soak burn in water or apply ointments or butter; this may cause infection. ▶ To prevent shock see above. ▶ For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway. ▶ Have a person with a facial burn sit up. ▶ Check pulse and breathing to monitor for shock until emergency help arrives.
Inhalation	▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary.
Ingestion	▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice.

Indication of any immediate medical attention and special treatment needed

The material may induce methaemoglobinaemia following exposure.

- ▶ Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.
- ▶ Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- ▶ Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.
- ▶ Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comment
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

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

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

for irritant gas exposures:

- ▶ the presence of the agent when it is inhaled is evanescent (of short duration) and therefore, cannot be washed away or otherwise removed
- ▶ arterial blood gases are of primary importance to aid in determination of the extent of damage. Never discharge a patient significantly exposed to an irritant gas without obtaining an arterial blood sample.
- ▶ supportive measures include suctioning (intubation may be required), volume cycle ventilator support (positive and expiratory pressure (PEEP), steroids and antibiotics, after a culture is taken
- ▶ If the eyes are involved, an ophthalmologic consultation is recommended

Occupational Medicine: Third Edition; Zenz, Dickerson, Horvath 1994 Pub: Mosby

For acute or short term repeated exposures to ammonia and its solutions:

- ▶ Mild to moderate inhalation exposures produce headache, cough, bronchospasm, nausea, vomiting, pharyngeal and retrosternal pain and conjunctivitis. Severe inhalation produces laryngospasm, signs of upper airway obstruction (stridor, hoarseness, difficulty in speaking) and, in excessively, high doses, pulmonary oedema.
- ▶ Warm humidified air may soothe bronchial irritation.

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- ▶ Test all patients with conjunctival irritation for corneal abrasion (fluorescein stain, slit lamp exam)
- ▶ Dyspneic patients should receive a chest X-ray and arterial blood gases to detect pulmonary oedema.

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
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Advice for firefighters

Fire Fighting	▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ If safe, switch off electrical equipment until vapour fire hazard removed. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. ▶ 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.
Fire/Explosion Hazard	▶ Liquid and vapour are flammable. ▶ Moderate fire hazard when exposed to heat or flame. ▶ Vapour forms an explosive mixture with air. ▶ Moderate explosion hazard when exposed to heat or flame. ▶ Vapour may travel a considerable distance to source of ignition. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: carbon dioxide (CO₂) carbon monoxide (CO) nitrogen oxides (NO_x) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material.
HAZCHEM	●3Y; ●3YE

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	▶ 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 small quantities with vermiculite or other absorbent material. ▶ Wipe up. ▶ Collect residues in a flammable waste container.
Major Spills	▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Consider evacuation (or protect in place). ▶ No smoking, naked lights or ignition sources. ▶ Increase ventilation. ▶ Stop leak if safe to do so. ▶ Water spray or fog may be used to disperse /absorb vapour. ▶ Contain spill with sand, earth or vermiculite. ▶ Use only spark-free shovels and explosion proof equipment. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite. ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ If contamination of drains or waterways occurs, advise emergency services.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▶ DO NOT allow clothing wet with material to stay in contact with skin
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	▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of overexposure 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 generation of static electricity. ▶ DO NOT use plastic buckets. ▶ Earth all lines and equipment. ▶ Use spark-free tools when handling. ▶ 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.
Other information	▶ Store in original containers in approved flammable liquid storage area. ▶ Store away from incompatible materials in a cool, dry, well-ventilated area. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ No smoking, naked lights, heat or ignition sources. ▶ Storage areas should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorised personnel - adequate security must be provided so that unauthorised personnel do not have access. ▶ Store according to applicable regulations for flammable materials for storage tanks, containers, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances. ▶ Use non-sparking ventilation systems, approved explosion proof equipment and intrinsically safe electrical systems. ▶ Have appropriate extinguishing capability in storage area (e.g. portable fire extinguishers - dry chemical, foam or carbon dioxide) and flammable gas detectors. ▶ Keep adsorbents for leaks and spills readily available. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. In addition, for tank storages (where appropriate): ▶ Store in grounded, properly designed and approved vessels and away from incompatible materials. ▶ For bulk storages, consider use of floating roof or nitrogen blanketed vessels; where venting to atmosphere is possible, equip storage tank vents with flame arrestors; inspect tank vents during winter conditions for vapour/ ice build-up. ▶ Storage tanks should be above ground and diked to hold entire contents.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Glass container is suitable for laboratory quantities ▶ Packing as supplied by manufacturer. ▶ Plastic containers may only be used if approved for flammable liquid. ▶ Check that containers are clearly labelled and free from leaks. ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▶ For materials with a viscosity of at least 2680 cSt. (23 deg. C) ▶ For manufactured product having a viscosity of at least 250 cSt. (23 deg. C) ▶ Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used. ▶ Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages ▶ In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	▶ Avoid reaction with oxidising agents

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	ethanolamine	Ethanolamine	3 ppm / 7.5 mg/m3	15 mg/m3 / 6 ppm	Not Available	Not Available
Australia Exposure Standards	p-phenylenediamine	p-Phenylenediamine	0.1 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	glyceryl monostearate	Stearates	10 mg/m3	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Australia Exposure Standards	propylene glycol	Propane-1,2-diol total: (vapour & particulates)	150 ppm / 474 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	propylene glycol	Propane-1,2-diol: particulates only	10 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	resorcinol	Resorcinol	10 ppm / 45 mg/m3	90 mg/m3 / 20 ppm	Not Available	Not Available
Australia Exposure Standards	ethanol	Ethyl alcohol	1000 ppm / 1880 mg/m3	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
cetostearyl alcohol	Not Available	Not Available
alcohols C16-18 ethoxylated	Not Available	Not Available
ethanolamine	30 ppm	Not Available

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Ingredient	Original IDLH	Revised IDLH
octadecyltrimethylammonium chloride	Not Available	Not Available
p-phenylenediamine	25 mg/m3	Not Available
glyceryl monostearate	Not Available	Not Available
2,5-diaminotoluene sulfate	Not Available	Not Available
propylene glycol	Not Available	Not Available
resorcinol	Not Available	Not Available
ethanol	Not Available	Not Available
EDTA disodium salt	Not Available	Not Available
sodium sulfite	Not Available	Not Available
m-aminophenol	Not Available	Not Available
ammonia	Not Available	Not Available
sodium erythorbate	Not Available	Not Available
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate	Not Available	Not Available
2-(2,4-diaminophenoxy)ethanol dihydrochloride	Not Available	Not Available
N,N-dimethyloctadecylamine	Not Available	Not Available
1,1'-oxydi-2-propanol	Not Available	Not Available

Exposure controls

Appropriate engineering controls	CARE: Explosive vapour air mixtures may be present on opening vessels which have contained liquid ammonia. Fatalities have occurred
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	NOTE: - 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. - Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 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

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	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	▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower. ▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▶ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound 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. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

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:
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Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
HYPALON	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE/EVAL/PE	C
PVA	C
PVC	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.

Respiratory protection

Type AK-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	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-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	Black flammable liquid with characteristic odour.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
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 (°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 Applicable
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Flammable.	Oxidising properties	Not Available

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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	There is sufficient evidence to classify this material as acutely toxic.
b) Skin Irritation/Corrosion	There is sufficient evidence to classify this material as skin corrosive or irritating.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	There is sufficient evidence to classify this material as sensitising to skin or the respiratory system
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 either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. The highly irritant properties of ammonia vapour result as the gas dissolves in mucous fluids and forms irritant, even corrosive solutions. Inhalation of the ammonia fumes causes coughing, vomiting, reddening of lips, mouth, nose, throat and conjunctiva while higher concentrations can cause temporary blindness, restlessness, tightness in the chest, pulmonary oedema (lung damage), weak pulse and cyanosis. Inhalation of high concentrations of vapour may cause breathing difficulty, tightness in chest, pulmonary oedema and lung damage. Brief exposure to high concentrations > 5000 ppm may cause death due to asphyxiation (suffocation) or fluid in the lungs. Prolonged or regular minor exposure to the vapour may cause persistent irritation of the eyes, nose and upper respiratory tract. Massive ammonia exposures may produce chronic airway hyperactivity and asthma with associated pulmonary function changes. The average nasal retention of ammonia by human subjects was found to be 83%.
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.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	If applied to the eyes, this material causes severe eye damage.
Chronic	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material. Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material. Animal testing shows that 2,4-diaminoanisole sulfate (DAAS) can increase the incidence of a number of tumours, including thyroid cancer, skin cancer, cancer of the sweat glands and cancer of the clitoris or penis. DAAS has also been shown to cause birth defects in animals. m-Phenylenediamine is suspected as a cause of bladder cancers in 'aniline' workers. Ocular toxicity and a death from subacute liver necrosis have been reported from contact with commercial hair dyes containing m-phenylenediamine. Workers in a factory producing m-phenylenediamine were exposed for 5 to 10 years to the material. of the workers (30 to 50 years old), 13.3% complained of dysuria. A scratch test with m-phenylenediamine produced positive reactions in 8% of the persons who also suffered from eosinophiluria and had urinary m-phenylenediamine levels of 0.3 to 40 ug/100 ml. Cytoscopy showed oedema of the mucous membranes, polypous swellings and infiltration in the urinary bladder. The eosinophilic character of these alterations was confirmed cytologically. Long term administration to experimental animals causes liver and kidney damage (after oral and percutaneous absorption, and percutaneous absorption respectively). m-Phenylenediamine administered orally to experimental animals in the diet or drinking water failed to induce tumours. On the other hand when injected subcutaneously, malignant tumours or sarcomas developed at the injection site

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p-phenylenediamine is suspected as a cause of bladder cancer in aniline workers. Long term exposure may produce irritation of the mucous membranes, asthma, fluid build-up and liver damage. Fur workers have experienced asthma and persistent upper airway irritation. P-phenylenediamine used in skin dyes have resulted in severe damage of the kidney and other organs, causing rapid death in several cases. P-phenylenediamine causes mutations, but there is no evidence of it causing damage to the embryo or birth defects. Cancer-causing potential cannot be ruled out.

Prolonged or repeated minor exposure to ammonia gas/vapour may cause long-term irritation to the eyes, nose and upper airway. Repeated exposure or prolonged contact may produce skin inflammation and conjunctivitis. Other effects may include ulcers in the mouth and disturbances to the bronchi and gastrointestinal tract. In animals, repeated exposure to sublethal levels produces adverse effects on the airways, liver, kidneys and spleen, as well as eye irritation and clouding of the cornea.

Prolonged exposure to ethanol may cause damage to the liver and cause scarring. It may also worsen damage caused by other agents. Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping.

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	Not Available	Not Available
cetostearyl alcohol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >8000 mg/kg ^[1]	Eye (Rodent - rabbit): 25mg - Mild
	Inhalation (Rat) LC50: >0.375 mg/l4h ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: >2000 mg/kg ^[1]	Skin (Rodent - rabbit): 500mg - Mild
alcohols C16-18 ethoxylated	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >3000 mg/kg ^[1]	Eye (Rodent - rabbit): 100uL/24H - Moderate
	Inhalation (Rat) LC50: >1.6 mg/l4h ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: 1260 mg/kg ^[2]	Skin (Rodent - rabbit): 500uL/24H - Moderate
ethanolamine	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 1000 mg/kg ^[2]	Eye (Rodent - rabbit): 250ug - Severe
	Inhalation(Guinea) LC50; ~0.145 mg/l4h ^[2]	Eye: adverse effect observed (irreversible damage) ^[1]
	Oral (Guinea) LD50; 620 mg/kg ^[2]	Skin (Mammal - species unspecified): 5%
octadecyltrimethylammonium chloride	TOXICITY	IRRITATION
	dermal (mouse) LD50: 1600 mg/kg ^[2]	Skin: adverse effect observed (corrosive) ^[1]
	Oral (Rat) LD50: 536 mg/kg ^[2]	
p-phenylenediamine	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >7940 mg/kg ^[1]	Eye (Rodent - rabbit): 30mg/24H - Mild
	Inhalation (Rat) LC50: 0.92 mg/L4h ^[2]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50: 80 mg/kg ^[2]	Skin (Human - man): 1%
		Skin (Human - man): 1% - Moderate
		Skin (Human - woman): 1%
		Skin (Human): 250mg/24H - Mild
		Skin (Mammal - dog): 250mg/24H - Mild
		Skin (Mammal - pig): 250mg/24H - Mild
		Skin (Rodent - guinea pig): 250mg/24H - Mild
		Skin (Rodent - mouse): 250mg/24H - Mild
		Skin (Rodent - rabbit): 12500ug/24H - Mild
glyceryl monostearate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
2,5-diaminotoluene sulfate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Eye: adverse effect observed (irritating) ^[1]
propylene glycol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 11890 mg/kg ^[2]	Eye (Rodent - rabbit): 100mg - Mild

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	Inhalation (Rat) LC50: >44.9 mg/l4h ^[1]	Eye (Rodent - rabbit): 500mg/24H - Mild
	Oral (Rat) LD50: 20000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (Human - child): 30%/96H(continuous) - Moderate
		Skin (Human - man): 10%/2D
		Skin (Human - woman): 30%/96H - Mild
		Skin (Human): 104mg/3D (intermittent) - Moderate
		Skin (Human): 20%
		Skin (Human): 500mg/7D - Mild
		Skin: no adverse effect observed (not irritating) ^[1]
resorcinol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 3360 mg/kg ^[2]	Eye (Rodent - rabbit): 100mg - Severe
	Inhalation (Rat) LC50: 5.325-78 mg/l4h ^[2]	Eye (Rodent - rabbit): 100mg - Severe
	Oral (Rat) LD50: 301 mg/kg ^[2]	Eye: adverse effect observed (irreversible damage) ^[1]
		Skin (Rodent - rabbit): 20mg/24H - Moderate
		Skin (Rodent - rabbit): 500mg
		Skin (Rodent - rabbit): 500mg - Severe
		Skin: adverse effect observed (irritating) ^[1]
ethanol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 17100 mg/kg ^[1]	Eye (Rodent - rabbit): 0.1mL
	Inhalation (Rat) LC50: 64000 ppm4h ^[2]	Eye (Rodent - rabbit): 100mg/4S - Moderate
	Oral (Rat) LD50: 7060 mg/kg ^[2]	Eye (Rodent - rabbit): 100uL - Moderate
		Eye (Rodent - rabbit): 500mg - Severe
		Eye (Rodent - rabbit): 500mg/24H - Mild
		Eye: adverse effect observed (irritating) ^[1]
		Eye: no adverse effect observed (not irritating) ^[1]
		Skin (Human): 70%/2D
		Skin (Rodent - rabbit): 20mg/24H - Moderate
		Skin (Rodent - rabbit): 400mg - Mild
		Skin: no adverse effect observed (not irritating) ^[1]
EDTA disodium salt	TOXICITY	IRRITATION
	Oral (Rat) LD50: 2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
sodium sulfite	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation (Rat) LC50: >5.5 mg/l4h ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
	Oral (Mouse) LD50: 820 mg/kg ^[2]	
m-aminophenol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Eye (Rodent - rabbit): 100mg/24H - Moderate
	Oral (Mouse) LD50: 401 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (Human - woman): 1%
		Skin (Rodent - rabbit): 12500ug/24H - Mild
		Skin: no adverse effect observed (not irritating) ^[1]
ammonia	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: 2000 ppm4h ^[2]	Eye (Rodent - rabbit): 1mg/30S - Severe
	Oral (Rat) LD50: 350 mg/kg ^[2]	Eye (Rodent - rabbit): 250ug - Severe
		Eye (Rodent - rabbit): 44ug - Severe
sodium erythorbate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Eye (Rodent - rabbit): 100mg - Mild
	Oral (Rat) LD50: >5000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate	TOXICITY	IRRITATION
	Oral (Rat) LD50: 264 mg/kg ^[2]	Eye: adverse effect observed (irritating) ^[1]

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		Skin: no adverse effect observed (not irritating) ^[1]
2-(2,4-diaminophenoxy)ethanol dihydrochloride	TOXICITY	IRRITATION
	dermal (rat) LD50: >=45450 mg/kg ^[1]	Eye: adverse effect observed (irreversible damage) ^[1]
	Oral (Rat) LD50: ~1000 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
N,N-dimethyloctadecylamine	TOXICITY	IRRITATION
	Oral (Rat) LD50: >=1000<=1250 mg/kg ^[1]	Eye (Rodent - rabbit): 20mg/24H - Moderate
		Skin (Rodent - rabbit): 20mg/24H - Moderate
1,1'-oxydi-2-propanol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2]	Eye (Rodent - rabbit): 500mg - Mild
	Oral (Rat) LD50: 14800 mg/kg ^[2]	Skin (Rodent - rabbit): 500uL/24H - Moderate
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	

CETOSTEARYL ALCOHOL	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe 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. Repeated exposures may produce severe ulceration. Alkyl alcohols of chain length C6-13 are absorbed from skin, when inhaled or swallowed but show evidence of little harm. They are broken down and rapidly excreted by the body.
ALCOHOLS C16-18 ETHOXYLATED	Remarks: Patch test on human volunteers did not demonstrate sensitization properties. * Cognis MSDS for Ceteraeth -20 The skin sensitising potential was assessed with C16-18AE (CAS 68439-49-6) in a Buehler Test according to OECD Guideline 406. In this study 20 female guinea pigs were induced by an epicutaneous occlusive dressing with 100% test substance (in maize oil) for 6 h on Day 0, 7 and 14. Two weeks after the last induction animals were challenged by epicutaneous occlusive exposure for 6 h to 100% test substance (in maize oil). 24 and 48 h after patch removal the application site was assessed for signs of local irritation. No dermal reactions were observed in any test animal at any time point. Available oral toxicity studies provide a coherent picture on the subchronic and chronic oral toxicity of AE. Based on the described effects and argumentations, the dietary NOAEL of 500 mg/kg bw/day (Shell, 1982) representing an average of all NOAELs, was chosen for the risk assessment. The clastogenic potential was assessed in a chromosomal aberration test with C16-18AE (CAS 68439-49-6) in mammalian cells according to OECD Guideline 473. Chinese hamster ovary cells (CHO) were exposed to 313, 625, 1250, 2500 and 5000 µg/mL in the presence and 1.25, 2.5, 5, 10, 20, 39 and 78 µg/mL in the absence of metabolic activation. Positive and vehicle (1% ethanol) control cultures were included in each assay. No increases in the number of chromosome aberrations in the presence or absence of metabolic activation were seen at any concentration tested. Appropriate reference mutagens used as positive controls showed a significant increase in chromosome aberrations, thus indicating the sensitivity of the assay, and the efficacy of the S9-mix. Hence, the test substance can not be regarded as clastogenic. The mutagenic potential in mammalian cells was assessed with C16-18AE (CAS 68439-49-6) by a HPRT-assay according to OECD Guideline 476. Following pre-tests with the concentration ranging from 1-100 µg/mL, the latter being the solubility limit of the test substance, Chinese hamster ovary cells were exposed for 4 h to concentrations of 1.8, 6, 18, 60 and 100 µg/mL in the absence and presence of metabolic activation by rat liver S9-mix. No dose-related increases in mutant colony numbers were obtained in two independent experiments with the test substance in either the presence or absence of S9-mix. Appropriate reference mutagens used as positive controls produced highly significant increases in mutation frequency, thus indicating the sensitivity of the assay. Therefore, the test substance is regarded as not mutagenic in mammalian cells. In conclusion, C16AE (CAS 52609-19-5) is regarded as non-genotoxic a reproductive toxicity study on a structurally similar material, C14-15AE7 (CAS 68951-67-7) was conducted at dietary levels of 25, 50 and 250 mg/kg bw/day. The 2-generation study (Procter and Gamble Ltd., 1977: Long term reproduction and teratology study in rats with Neodol 45-7; unpublished report) did not show any potential for reproductive toxicity at the tested dose levels. The NOAEL for reproductive effects was greater than the highest tested dose of 250 mg/kg bw/day. Although the study was pre-GLP and not in full compliance with current OECD guidelines, the study provided sufficient information and was assessed to be scientifically reliable. The comparable toxicokinetic and metabolic profiles, as well as their toxicological similarities for this and other toxicological endpoints, support the conclusion that insights from the reproductive toxicity study on higher ethoxylated AE are applicable to AE with an ethoxylation degree of 1 - 2.5. * REACH Dossier 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 sensitisers. The oxidization products also cause irritation. 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. Tri-ethylene glycol ethers undergo enzymatic oxidation to toxic alkoxy acids. They may irritate the skin and the eyes. At high oral doses, they may cause depressed reflexes, flaccid muscle tone, breathing difficulty and coma. Death may result in experimental animal. However, repeated exposure may cause dose dependent damage to the kidneys as well as reproductive and developmental defects.
ETHANOLAMINE	* Bayer
OCTADECYLTRIMETHYLAMMONIUM CHLORIDE	Somnolence, ataxia, diarrhoea, allergic dermatitis after systemic exposure recorded. 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

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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: ATMA (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.

GLYCERYL MONOSTEARATE

For aliphatic fatty acids (and salts)

Acute oral (gavage) toxicity:

The acute oral LD50 values in rats for both were greater than >2000 mg/kg bw. Clinical signs were generally associated with poor condition following administration of high doses (salivation, diarrhoea, staining, piloerection and lethargy). There were no adverse effects on body weight in any study. In some studies, excess test substance and/or irritation in the gastrointestinal tract was observed at necropsy.

Skin and eye irritation potential, with a few stated exceptions, is chain length dependent and decreases with increasing chain length. According to several OECD test regimes the animal skin irritation studies indicate that the C6-10 aliphatic acids are severely irritating or corrosive, while the C12 aliphatic acid is irritating, and the C14-22 aliphatic acids generally are not irritating or mildly irritating. Human skin irritation studies using more realistic exposures (30-minute, 1-hour or 24-hours) indicate that the aliphatic acids have sufficient, good or very good skin compatibility.

Animal eye irritation studies indicate that among the aliphatic acids, the C8-12 aliphatic acids are irritating to the eye while the C14-22 aliphatic acids are not irritating.

Eye irritation potential of the ammonium salts does not follow chain length dependence; the C18 ammonium salts are corrosive to the eyes.

Dermal absorption:

The in vitro penetration of C10, C12, C14, C16 and C18 fatty acids (as sodium salt solutions) through rat skin decreases with increasing chain length. At 86.73 ug C16/cm² and 91.84 ug C18/cm², about 0.23% and less than 0.1% of the C16 and C18 soap solutions is absorbed after 24 h exposure, respectively.

Sensitisation:

No sensitisation data were located.

Repeat dose toxicity:

Repeated dose oral (gavage or diet) exposure to aliphatic acids did not result in systemic toxicity with NOAELs greater than the limit dose of 1000 mg/kg bw.

Mutagenicity

Aliphatic acids do not appear to be mutagenic or clastogenic in vitro or in vivo

Carcinogenicity

No data were located for carcinogenicity of aliphatic fatty acids.

Reproductive toxicity

No effects on fertility or on reproductive organs, or developmental effects were observed in studies on aliphatic acids and the NOAELs correspond to the maximum dose tested. The weight of evidence supports the lack of reproductive and developmental toxicity potential of the aliphatic acids category.

Given the large number of substances in this category, their closely related chemical structure, expected trends in physical chemical properties, and similarity of toxicokinetic properties, both mammalian and aquatic endpoints were filled using read-across to the closest structural analogue, and selecting the most conservative supporting substance effect level.

Structure-activity relationships are not evident for the mammalian toxicity endpoints. That is, the low mammalian toxicity of this category of substances limits the ability to discern structural effects on biological activity. Regardless, the closest structural analogue with the most conservative effect value was selected for read across. Irritation is observed for chain lengths up to a cut-off* at or near 12 carbons).

Metabolism:

The aliphatic acids share a common degradation pathway in which they are metabolized to acetyl-CoA or other key metabolites in all living systems. Common biological pathways result in structurally similar breakdown products, and are, together with the physico-chemical properties, responsible for similar environmental behavior and essentially identical hazard profiles with regard to human health.

Differences in metabolism or biodegradability of even and odd numbered carbon chain compounds or saturated/ unsaturated compounds are not expected; even-and odd-numbered carbon chain compounds, and the saturated and unsaturated compounds are naturally occurring and are expected to be metabolized and biodegraded in the same manner.

The acid and alkali salt forms of the homologous aliphatic acid are expected to have many similar physicochemical and toxicological properties when they become bioavailable; therefore, data read across is used for those instances where data are available for the acid form but not the salt, and vice versa. In the gastrointestinal tract, acids and bases are absorbed in the undissociated (non-ionised) form by simple diffusion or by facilitated diffusion. It is expected that both the acids and the salts will be present in (or converted to) the acid form in the stomach. This means that for both aliphatic acid or aliphatic acid salt, the same compounds eventually enter the small intestine, where equilibrium, as a result of increased pH, will shift towards dissociation (ionised form). Hence, the situation will be similar for compounds originating from acids and therefore no differences in uptake are anticipated. Note that the saturation or unsaturation level is not a factor in the toxicity of these substances and is not a critical component of the read across process.

Toxicokinetics:

The turnover of the [14C] surfactants in the rat showed that there was no significant difference in the rate or route of excretion of 14C given by intraperitoneal or subcutaneous administration. The main route of excretion was as 14CO₂ in the expired air at 6 h after administration. The remaining material was incorporated in the body. Longer fatty acid chains are more readily incorporated than shorter chains. At ca. 1.55 and 1.64 mg/kg bw, 71% of the C16:0 and 56% of the C18:0 was incorporated and 21% and 38% was excreted as 14CO₂, respectively.

Glycidyl fatty acid esters (GEs), one of the main contaminants in processed oils, are mainly formed during the deodorisation step in the refining process of edible oils and therefore occur in almost all refined edible oils. GEs are potential carcinogens, due to the fact

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	that they readily hydrolyze into the free form glycidol in the gastrointestinal tract, which has been found to induce tumours in various rat tissues. Therefore, significant effort has been devoted to inhibit and eliminate the formation of GEs GEs contain a common terminal epoxide group but exhibit different fatty acid compositions. This class of compounds has been reported in edible oils after overestimation of 3-monochloropropane-1,2-diol (3-MCPD) fatty acid esters analysed by an indirect method. 3-MCPD esters have been studied as food processing contaminants and are found in various food types and food ingredients, particularly in refined edible oils. 3-Monochloropropane-1,2-diol (3-MCPD) and 2-monochloropropane-1,3-diol (2-MCPD) are chlorinated derivatives of glycerol (1,2,3-propanetriol). 3- and 2-MCPD and their fatty acid esters are among non-volatile chloropropanols. Glycidol is associated with the formation and decomposition of 3- and 2-MCPD. It forms monoesters with fatty acids (GE) during the refining of vegetable oils. Chloropropanols are formed in HVP during the hydrochloric acid-mediated hydrolysis step of the manufacturing process. In food production, chloropropanols form from the reaction of endogenous or added chloride with glycerol or acylglycerol. Although harmful effects on humans and animals have not been demonstrated, the corresponding hydrolysates, 3-MCPD and glycidol, have been identified as rodent genotoxic carcinogens, ultimately resulting in the formation of kidney tumours (3-MCPD) and tumours at other tissue sites (glycidol). Therefore, 3-MCPD and glycidol have been categorised as "possible human carcinogens (group 2B) and "probably carcinogenic to humans (group 2A), respectively, by the International Agency for Research on Cancer (IARC). Diacylglyceride (DAG) based oils produced by one company were banned from the global market due to "high levels" of GEs. Several reports have also suggested that a bidirectional transformation process may occur not only between glycidol and 3-MCPD but also their esterified forms in the presence of chloride ions. The transformation rate of glycidol to 3-MCPD was higher than that of 3-MCPD to glycidol under acidic conditions in the presence of chloride ion. Precursors of GEs in refined oils have been identified as partial acylglycerols, that is, DAGs and monoacylglycerides (MAGs); however, whether they also originate from triacylglycerides (TAGs) is still a topic of controversial debates. Several authors noted that pure TAGs were stable during heat treatment (such as 235 deg C) for 3 h and were therefore not involved in the formation of GEs. However, experimental results have shown that small amounts of GEs are present in a heat-treated oil model consisting of almost 100% TAGs. The formation of GEs from TAGs can be attributed to the pyrolysis of TAGs to DAGs and MAGs. In contrast, 3-MCPD esters in refined oils can be obtained from TAG. Presently, the mechanism for the formation of GE intermediates and the relationship between GEs and 3-MCPD esters are still unknown. For group E aliphatic esters (polyol esters): The polyol esters, including trimethylolpropane (TMP), Pentaerythritol (PE) and dipentaerythritol (diPE) are unique in their chemical characteristics since they lack beta-tertiary hydrogen atoms, thus leading to stability against oxidation and elimination. Therefore their esters with C5-C10 fatty acids have applications as artificial lubricants. Because of their stability at high temperatures, they are also used in high temperature applications such as industrial oven chain oils, high temperature greases, fire resistant transformer coolants and turbine engines. Polyol esters that are extensively esterified also have greater polarity, less volatility and enhanced lubricating properties. Acute toxicity: Animal studies show relatively low toxicity by swallowing. These esters are hydrolysed in the gastrointestinal tract, and studies have not shown evidence of these accumulating in body tissues. Acute toxicity by skin contact was also found to be low. Repeat dose toxicity: According to animal testing, polyol esters show a low level of toxicity following repeated application, either by swallowing or by skin contact. Reproductive and developmental toxicity: This group should not produce profound reproductive effects in animals. Genetic toxicity: Tests have shown this group to be inactive. It is unlikely that these substances cause mutations. Cancer-causing potential: No association between this group of substances and cancer.
2,5-DIAMINOTOLUENE SULFATE	Diaminotoluenes are considered toxic and highly irritant chemicals. In humans, as in animals, they irritate the mucous membranes and skin, and lead to eye infection and clouding of the cornea. When solutions come into contact with skin, they can cause irritation, severe skin inflammation and blistering. Inhaling fumes can result in coughing, difficulty breathing, and respiratory distress. Animal testing shows that diaminotoluenes can depress the central nervous system, causing erection of hair, drooped eyelids, incoordination and tremors, with chronic exposure damaging the kidneys and reducing length of life. Diaminotoluenes can also cause birth defects and damage DNA, as well as cause mutations. Animal testing also shows that diaminotoluenes can potentially cause liver and breast cancer.
PROPYLENE GLYCOL	The acute oral toxicity of propylene glycol is very low; large amounts are needed to cause perceptible health damage in humans. Serious toxicity generally occurs only at blood concentrations over 1 g/L, which requires extremely high intake over a relatively short period of time; this is nearly impossible with consuming foods or supplements which contain 1g/kg of PG at most. Poisonings are usually due to injection through a vein or accidental swallowing of large amounts by children. The potential for long-term oral toxicity is also low. Prolonged contact with propylene glycol is essentially non-irritating to the skin. Undiluted propylene glycol is minimally irritating to the eye, and can produce a slight, temporary inflammation of the conjunctiva. Exposure to mists may cause irritation of both the eye and the upper airway. Inhalation of propylene glycol vapours may be irritating to some individuals. It is therefore recommended that propylene glycol not be used in applications where inhalation exposure or human eye contact with the spray mists of these materials is likely, such as fogs for theatrical productions or antifreeze solutions for emergency eye wash stations. Propylene glycol is metabolized in humans to pyruvic acid, acetic acid, lactic acid and propionaldehyde; the last of which is potentially hazardous. Propylene glycol shows no evidence of causing cancer or genetic toxicity. Research has suggested that individuals who cannot tolerate propylene glycol probably experience a special form of irritation, but they only rarely develop allergic contact dermatitis. Other investigators believe that the incidence of allergic contact dermatitis in people exposed to propylene glycol may be greater than 2% in patients with eczema. One study strongly suggests a connection between airborne concentrations of propylene glycol in houses and development of asthma and allergic reactions, such as inflammation of the nose and hives, in children. Another study suggested that the concentration of PGEs (propylene glycol and glycol ethers) in indoor air is linked to increased risk of developing numerous respiratory and immune disorders in children, including asthma, hay fever, eczema and allergies, with increased risk ranging from 50% to 180%. This concentration has been linked to use of water-based paints and water-based system cleansers. Patients with bladder inflammation and vulvodynia (chronic pain of the vulva) may be especially sensitive to propylene glycol. Women suffering with yeast infections may notice that some over the counter creams cause intense burning. Post-menopausal women who require the use of an oestrogen cream may notice that creams made with propylene glycol often cause extremely uncomfortable burning along the vulva and around the anus. Some electronic cigarette users who inhale propylene glycol vapour may experience dryness of the throat or shortness of breath. Adverse responses to administration of drugs which use propylene glycol as an excipient have been seen in a number of people especially at high doses. These include low blood pressure, slow heart rate, ECG abnormalities, heartbeat irregularities, lactic acidosis, breakdown of red cells and cardiac arrest.
EDTA DISODIUM SALT	For ethylenediaminetetraacetic acid (EDTA) and its salts: EDTA is a strong organic acid, with a high affinity for alkaline-earth ions (for example, calcium and magnesium) and heavy-metal ions (such as lead and mercury), resulting in highly stable chelate complexes. The ability of EDTA to complex is used commercially to either promote or inhibit chemical reactions, depending on application. EDTA and its salts are expected to be absorbed by the lungs and the gastrointestinal tract; absorption through skin is unlikely. They cause mild skin irritation, and severe eye irritation. The greatest risk in the human body will occur when the EDTA attempts to scavenge the trace metals used and required by the body. The binding of divalent and trivalent cations by EDTA can cause mineral deficiencies, such as zinc deficiency. These appear to be responsible for all of the known pharmacological effects. EDTA and its salts are mostly eliminated through the urine, with 5% eliminated via the bile, along with the metal ions which are bound to it. Trisodium EDTA has not been found to cause cancer. EDTA and its salts are not likely to cause harm to children and infants at levels likely to be encountered.

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M-AMINOPHENOL	Spastic paralysis, excitement, effects on fertility, extraembryonic structures, foetotoxicity, foetolethality recorded. Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
N,N-[BIS(HYDROXYETHYL)-P-PHENYLENEDIAMINE] SULFATE	* [Olin] NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.
2-(2,4-DIAMINOPHENOXY)ETHANOL DIHYDROCHLORIDE	SCCP/0979/06 Opinion on 2,4-diaminophenoxyethanol and its salts General toxicity The LD50 of the test item was close to 1000 mg/kg bw. The NOAEL was set at 20 mg/kg bw/day in a rat 13-week toxicity study and in a rat prenatal development toxicity study. Irritation / sensitisation The test substance was not irritant to rabbit skin. It was slightly irritant to rabbit eyes when tested undiluted or at 4% in water. The topical application of undiluted 2,4-diaminophenoxyethanol dihydrochloride did not produce sensitisation reactions in a Buehler test. However, it was considered to be a moderate skin sensitiser in an LLNA study. Dermal absorption The maximum dermal absorption, observed under oxidative conditions in a typical hair dye formulation, was 4.33 ug equiv/cm2. Mutagenicity 2,4-diaminophenoxyethanol HCl was mutagenic in vitro. It induced gene mutations in Salmonella typhimurium strain TA98 in the presence of metabolic activation, and chromosome aberrations and micronuclei in cultured human lymphocytes with or without metabolic activation. In mouse lymphoma L5178Y cells in vitro, statistically significant increases in gene mutations (HPRT) were observed in both experiments conducted, but the increase was small and dose-response was not obvious. Thus, the result is considered equivocal. The test substance did not induce micronuclei in bone marrow erythrocytes or DNA damage (measured by unscheduled DNA synthesis) in rat liver cells in vivo, although both assays showed slight effects in individual animals. In published literature, negative results have been reported for 2,4-diaminophenoxyethanol for the induction of reversion mutations in Salmonella typhimurium strains TA1535, TA100, TA1537, TA1538, and TA98 with and without Aroclor-1254-induced rat-liver microsomal activation system and for the induction of reverse mutations in strain XV185-14C and gene conversions in strain D4 of the yeast Saccharomyces cerevisiae. The urine of rats treated topically, orally or intraperitoneally with 2,4-diaminophenoxyethanol showed no mutagenic activity. Carcinogenicity The test substance was not carcinogenic in a mouse 104-week drinking water study. No conclusion can be drawn from the rat study
N,N-DIMETHYLOCTADECYLAMINE	FND ether amines and FND amines are very similar in structure (length of chain or degree of saturation), function and toxicity. Acute exposure to FND ether amines by oral, dermal and inhalation may produce moderate to slight toxicity but repeated skin contact can be highly irritating. However, exposure did not produce any organ-specific toxicity, genetic, reproductive or developmental defect same as in FND amines.
1,1'-OXYDI-2-PROPANOL	For dipropylene glycol (DPG) and its isomers: Acute toxicity: Animal testing shows dipropylene glycol is not acutely toxic by mouth, skin contact or inhalation. DPG is slightly irritating to the skin and eyes of rabbits. Based on human data, DPG does not cause skin sensitization. Repeat dose toxicity: Animal testing shows DPG did not cause adverse effects on repeated exposure at low doses. Higher doses may cause kidney damage. Reproductive and developmental toxicity: Animal testing has not shown DPG to cause foetal toxicity or birth defects, at levels which did not cause toxicity to the mother. Genetic toxicity: Studies show that DPG does not cause genetic toxicity.
CETOSTEARYL ALCOHOL & ETHANOLAMINE & OCTADECYLTRIMETHYLAMMONIUM CHLORIDE & EDTA DISODIUM SALT & SODIUM SULFITE & AMMONIA & N,N-DIMETHYLOCTADECYLAMINE	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.
CETOSTEARYL ALCOHOL & GLYCERYL MONOSTEARATE & AMMONIA & SODIUM ERYTHORBATE	No significant acute toxicological data identified in literature search.
ALCOHOLS C16-18 ETHOXYLATED & ETHANOLAMINE & RESORCINOL & AMMONIA	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
ALCOHOLS C16-18 ETHOXYLATED & ETHANOLAMINE & P-PHENYLENEDIAMINE & PROPYLENE GLYCOL & RESORCINOL & ETHANOL & M-AMINOPHENOL & N,N-DIMETHYLOCTADECYLAMINE	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.
ETHANOLAMINE & N,N-DIMETHYLOCTADECYLAMINE	Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, inflammation of the bronchi and lungs, and possible lung damage. Repeated and/or prolonged exposure to some amines may result in liver disorders, jaundice and liver enlargement. Some amines have been shown to cause kidney, blood and central nervous system disorders in animal studies. While most polyurethane amine catalysts are not sensitizers, some certain individuals may also become sensitized to amines and may experience distress while breathing, including asthma-like attacks, whenever they are subsequently exposed to even very small amounts of vapours. Once sensitized, these individuals must avoid any further exposure to amines. Chronic overexposure may lead to permanent lung injury, including reduction in lung function, breathlessness, chronic inflammation of the bronchi, and immunologic lung disease. Products with higher vapour pressures may reach higher concentrations in the air, and this increases the likelihood of worker exposure. Inhalation hazards are increased when exposure to amine catalysts occurs in situations that produce aerosols, mists or heated vapours. Such situations include leaks in fitting or transfer lines. Medical conditions generally aggravated by inhalation exposure include asthma, bronchitis and emphysema. Skin contact: Skin contact with amine catalysts poses a number of concerns. Direct skin contact can cause moderate to severe irritation and injury, from simple redness and swelling to painful blistering, ulceration, and chemical burns. Repeated or prolonged exposure may also result in severe cumulative skin inflammation. Skin contact with some amines may result in allergic sensitization. Sensitized persons should avoid all contact with amine catalysts. Whole-body effects resulting from the absorption of the amines though skin exposure may include headaches, nausea, faintness, anxiety, decrease in blood pressure, reddening of the skin, hives, and facial swelling. These symptoms may be related to the pharmacological action of the amines, and they are usually temporary. Eye contact: Amine catalysts are alkaline and their vapours are irritating to the eyes, even at low concentrations. Direct contact with liquid amine may cause severe irritation and tissue injury, and the "burning" may lead to blindness. Contact with solid products may

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	result in mechanical irritation, pain and corneal injury. Exposed persons may experience excessive tearing, burning, inflammation of the conjunctiva, and swelling of the cornea, which manifests as a blurred or foggy vision with a blue tint, and sometimes a halo phenomenon around lights. These symptoms are temporary and usually disappear when exposure ends. Some people may experience this effect even when exposed to concentrations that do not cause respiratory irritation. Ingestion: Amine catalysts have moderate to severe toxicity if swallowed. Some amines can cause severe irritation, ulcers and burns of the mouth, throat, gullet and gastrointestinal tract. Material aspirated due to vomiting can damage the bronchial tubes and the lungs. Affected people may also experience pain in the chest or abdomen, nausea, bleeding of the throat and gastrointestinal tract, diarrhea, dizziness, drowsiness, thirst, collapse of circulation, coma and even death.
P-PHENYLENEDIAMINE & 2,5-DIAMINOTOLUENE SULFATE & EDTA DISODIUM SALT & 2-(2,4-DIAMINOPHENOXY)ETHANOL DIHYDROCHLORIDE & N,N-DIMETHYLOCTADECYLAMINE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
P-PHENYLENEDIAMINE & RESORCINOL & M-AMINOPHENOL & N,N-[BIS(HYDROXYETHYL)-P-PHENYLENEDIAMINE] SULFATE	The use of oxidative hair dye formulations results in consumer exposure to precursors and couplers as well as to their reaction products. Exposure to reaction products is considerably lower compared to that from precursors and coupler. No exposure to intermediates was noted. The percutaneous absorption rates in the in vitro skin penetration studies of the 14 representative reaction products evaluated ranged from 3.27 to 717.79 ng/cm2 (mean +1SD). This corresponds to 1.9 to 416 ug absorbed dose (i.e. dose potentially bioavailable) per hair dye application (i.e. 0.03 to 6.9 ug/kg bw). In the risk assessment of reaction products general toxicity is not considered a concern due to the low and intermittent exposure (on average once per month). Scientific Committee on Consumer Safety SCCS Opinion on reaction products of oxidative hair dye ingredients formed during hair dyeing processes; September 2010 https://ec.europa.eu/health/scientific_committees/consumer_safety/docs/sccs_o_037.pdf
P-PHENYLENEDIAMINE & 2,5-DIAMINOTOLUENE SULFATE & N,N-[BIS(HYDROXYETHYL)-P-PHENYLENEDIAMINE] SULFATE & 2-(2,4-DIAMINOPHENOXY)ETHANOL DIHYDROCHLORIDE	p-Phenylenediamine is oxidised by the liver microsomal enzymes (S9). Pure p-phenylenediamine does not cause mutations, but after it is oxidized, it does.
P-PHENYLENEDIAMINE & RESORCINOL & SODIUM SULFITE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
M-AMINOPHENOL & N,N-DIMETHYLOCTADECYLAMINE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

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

SECTION 12 Ecological information

Toxicity

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	Not Available	Not Available	Not Available	Not Available	Not Available
cetostearyl alcohol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	1666mg/l	1
	EC50	72h	Algae or other aquatic plants	0.33mg/l	2
	LC50	96h	Fish	0.012mg/l	2
	EC50	96h	Algae or other aquatic plants	235mg/l	1
	NOEC(ECx)	504h	Crustacea	0.98mg/l	1
alcohols C16-18 ethoxylated	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	LC50	96h	Fish	1-10mg/l	Not Available
	EC20(ECx)	72h	Algae or other aquatic plants	0.06mg/l	2
ethanolamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	65mg/l	1
	EC50	72h	Algae or other aquatic plants	15mg/l	1
	EC50	96h	Algae or other aquatic plants	80mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	4mg/l	1
	LC50	96h	Fish	75mg/l	1

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octadecyltrimethylammonium chloride	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	~0.04mg/l	2
	EC50	72h	Algae or other aquatic plants	0.05mg/l	2
	NOEC(ECx)	504h	Crustacea	>=0.005mg/L	2
	LC50	96h	Fish	0.033mg/l	Not Available
p-phenylenediamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	0.15mg/l	2
	BCF	672h	Fish	20-42	7
	EC50	72h	Algae or other aquatic plants	0.056mg/l	2
	NOEC(ECx)	504h	Crustacea	0.001mg/L	2
	EC50	96h	Algae or other aquatic plants	0.154mg/l	2
	LC50	96h	Fish	0.028mg/l	2
glyceryl monostearate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	>0.01mg/l	2
	EC50	72h	Algae or other aquatic plants	>0.01mg/L	2
	EC50(ECx)	48h	Crustacea	>0.01mg/l	2
2,5-diaminotoluene sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	0.51mg/l	2
	EC50	72h	Algae or other aquatic plants	0.31mg/l	2
	LC50	96h	Fish	0.36mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	0.218mg/l	2
propylene glycol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	710mg/L	4
	EC50	48h	Crustacea	>114.4mg/L	4
	EC50	72h	Algae or other aquatic plants	19300mg/l	2
	NOEC(ECx)	336h	Algae or other aquatic plants	<5300mg/l	1
	EC50	96h	Algae or other aquatic plants	19000mg/l	2
resorcinol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	<=0.8mg/l	1
	EC50	72h	Algae or other aquatic plants	1.1-72mg/l	1
	NOEC(ECx)	504h	Crustacea	>=0.172mg/L	2
	LC50	96h	Fish	53mg/l	Not Available
ethanol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	2mg/L	4
	EC50	72h	Algae or other aquatic plants	275mg/l	2
	LC50	96h	Fish	42mg/L	4
	EC50	96h	Algae or other aquatic plants	<0.001mg/L	4
	EC50(ECx)	96h	Algae or other aquatic plants	<0.001mg/L	4
EDTA disodium salt	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	>60mg/l	2
	NOEC(ECx)	504h	Crustacea	25mg/l	2
	LC50	96h	Fish	>100mg/l	2
sodium sulfite	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	89mg/l	2
	NOEC(ECx)	504h	Crustacea	>10mg/l	2
	EC50	72h	Algae or other aquatic plants	43.8mg/l	2
	ErC50	72h	Algae or other aquatic plants	447.8mg/l	2
	EC50	96h	Algae or other aquatic plants	48mg/l	2
	LC50	96h	Fish	147-215mg/l	2
m-aminophenol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	>100mg/l	2
	BCF	1008h	Fish	<4	7
	EC50	48h	Crustacea	0.447mg/l	2

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	EC50	72h	Algae or other aquatic plants	41mg/l	2
	NOEC(ECx)	72h	Fish	0.008mg/l	4
	ErC50	72h	Algae or other aquatic plants	62mg/l	2
ammonia	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	96h	Crustacea	0.83mg/L	5
	LC50	96h	Fish	33.3mg/L	4
sodium erythorbate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	>84mg/l	2
	EC50	72h	Algae or other aquatic plants	>160mg/l	2
	LC50	96h	Fish	>100mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	20mg/l	2
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	3.2-10mg/l	4
	EC50	48h	Crustacea	0.381mg/l	2
	EC50	72h	Algae or other aquatic plants	0.066mg/l	2
	EC50(ECx)	72h	Algae or other aquatic plants	0.066mg/l	2
2-(2,4-diaminophenoxy)ethanol dihydrochloride	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	6.49mg/l	2
	EC50	72h	Algae or other aquatic plants	30.1mg/l	2
	LC50	96h	Fish	>400mg/l	2
	EC10(ECx)	72h	Algae or other aquatic plants	<0.092mg/l	2
N,N-dimethyloctadecylamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	0.056mg/L	2
	EC50	72h	Algae or other aquatic plants	0.006mg/L	2
	NOEC(ECx)	72h	Algae or other aquatic plants	0.001mg/L	2
	LC50	96h	Fish	>0.1<1mg/l	2
1,1'-oxydi-2-propanol	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	0.3-1.4	7
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. 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
ethanolamine	LOW	LOW
p-phenylenediamine	LOW (Half-life = 56 days)	LOW (Half-life = 0.12 days)
glyceryl monostearate	LOW	LOW
propylene glycol	LOW	LOW
resorcinol	LOW	LOW
ethanol	LOW (Half-life = 2.17 days)	LOW (Half-life = 5.08 days)
EDTA disodium salt	LOW	LOW
m-aminophenol	HIGH	HIGH
N,N-dimethyloctadecylamine	HIGH	HIGH
1,1'-oxydi-2-propanol	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
cetostearyl alcohol	MEDIUM (BCF = 1300)
alcohols C16-18 ethoxylated	LOW (LogKOW = 7.92)
ethanolamine	LOW (LogKOW = -1.31)
octadecyltrimethylammonium chloride	MEDIUM (LogKOW = 4.17)
p-phenylenediamine	LOW (BCF = 0.38)
glyceryl monostearate	HIGH (LogKOW = 6.62)

Ingredient	Bioaccumulation
propylene glycol	LOW (BCF = 1)
resorcinol	LOW (BCF = 2.4)
ethanol	LOW (LogKOW = -0.31)
EDTA disodium salt	LOW (LogKOW = -11.7)
sodium sulfite	LOW (LogKOW = -7.78)
m-aminophenol	LOW (BCF = 40)
ammonia	LOW (LogKOW = -2.66)
2-(2,4-diaminophenoxy)ethanol dihydrochloride	LOW (LogKOW = -2.25)
N,N-dimethyloctadecylamine	LOW (LogKOW = 8.39)
1,1'-oxydi-2-propanol	LOW (BCF = 4.6)

Mobility in soil

Ingredient	Mobility
ethanolamine	HIGH (Log KOC = 1)
p-phenylenediamine	LOW (Log KOC = 72.53)
glyceryl monostearate	LOW (Log KOC = 486.6)
propylene glycol	HIGH (Log KOC = 1)
resorcinol	LOW (Log KOC = 434)
ethanol	HIGH (Log KOC = 1)
EDTA disodium salt	LOW (Log KOC = 1046)
m-aminophenol	LOW (Log KOC = 72.53)
N,N-dimethyloctadecylamine	LOW (Log KOC = 514700)
1,1'-oxydi-2-propanol	HIGH (Log KOC = 1)

SECTION 13 Disposal considerations**Waste treatment methods**

Product / Packaging disposal	- Containers may still present a chemical hazard/ danger when empty. - Return to supplier for reuse/ recycling if possible. Otherwise: - If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. - Where possible retain label warnings and SDS and observe all notices pertaining to the product. 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. - Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. - Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material). - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
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SECTION 14 Transport information**Labels Required**

	
Marine Pollutant	
HAZCHEM	●3Y; ●3YE

Land transport (ADG)

14.1. UN number or ID number	1993				
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains ethanol)				
14.3. Transport hazard class(es)	<table> <tr> <td>Class</td><td>3</td></tr> <tr> <td>Subsidiary Hazard</td><td>Not Applicable</td></tr> </table>	Class	3	Subsidiary Hazard	Not Applicable
Class	3				
Subsidiary Hazard	Not Applicable				
14.4. Packing group	III				
14.5. Environmental hazard	Environmentally hazardous				

Lucky Super Soft True Hair Color #10 Natural Black

14.6. Special precautions for user	Special provisions	223 274
	Limited quantity	5 L

Air transport (ICAO-IATA / DGR)

14.1. UN number	1993	
14.2. UN proper shipping name	Flammable liquid, n.o.s. * (contains ethanol)	
14.3. Transport hazard class(es)	ICAO/IATA Class	3
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	3L
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	366
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	355
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y344
	Passenger and Cargo Limited Maximum Qty / Pack	10 L

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1993	
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains ethanol)	
14.3. Transport hazard class(es)	IMDG Class	3
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Marine Pollutant	
14.6. Special precautions for user	EMS Number	F-E , S-E
	Special provisions	223 274 955
	Limited Quantities	5 L

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
cetostearyl alcohol	Not Available
alcohols C16-18 ethoxylated	Not Available
ethanolamine	Not Available
octadecyltrimethylammonium chloride	Not Available
p-phenylenediamine	Not Available
glyceryl monostearate	Not Available
2,5-diaminotoluene sulfate	Not Available
propylene glycol	Not Available
resorcinol	Not Available
ethanol	Not Available
EDTA disodium salt	Not Available
sodium sulfite	Not Available
m-aminophenol	Not Available
ammonia	Not Available
sodium erythorbate	Not Available
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate	Not Available
2-(2,4-diaminophenoxy)ethanol dihydrochloride	Not Available
N,N-dimethyloctadecylamine	Not Available
1,1'-oxydi-2-propanol	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
cetostearyl alcohol	Not Available
alcohols C16-18 ethoxylated	Not Available
ethanolamine	Not Available
octadecyltrimethylammonium chloride	Not Available
p-phenylenediamine	Not Available
glyceryl monostearate	Not Available
2,5-diaminotoluene sulfate	Not Available
propylene glycol	Not Available
resorcinol	Not Available
ethanol	Not Available
EDTA disodium salt	Not Available
sodium sulfite	Not Available
m-aminophenol	Not Available
ammonia	Not Available
sodium erythorbate	Not Available
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate	Not Available
2-(2,4-diaminophenoxy)ethanol dihydrochloride	Not Available
N,N-dimethyloctadecylamine	Not Available
1,1'-oxydi-2-propanol	Not Available

SECTION 15 Regulatory information**Safety, health and environmental regulations / legislation specific for the substance or mixture****cetostearyl alcohol is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

alcohols C16-18 ethoxylated is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

ethanolamine is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

octadecyltrimethylammonium chloride is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

p-phenylenediamine is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 10 / Appendix C

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

glyceryl monostearate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

2,5-diaminotoluene sulfate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

propylene glycol is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

resorcinol is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

ethanol is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australian Inventory of Industrial Chemicals (AIIC)
EDTA disodium salt is found on the following regulatory lists
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4
Australian Inventory of Industrial Chemicals (AIIC)
sodium sulfite is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
m-aminophenol is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)
ammonia is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)
sodium erythorbate is found on the following regulatory lists
Australian Inventory of Industrial Chemicals (AIIC)
N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
2-(2,4-diaminophenoxy)ethanol dihydrochloride is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
N,N-dimethyloctadecylamine is found on the following regulatory lists
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
1,1'-oxydi-2-propanol is found on the following regulatory lists
Australian Inventory of Industrial Chemicals (AIIC)

Additional Regulatory Information
Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (2,5-diaminotoluene sulfate)
Canada - NDSL	No (cetostearyl alcohol; alcohols C16-18 ethoxylated; ethanolamine; octadecyltrimethylammonium chloride; p-phenylenediamine; glyceryl monostearate; propylene glycol; resorcinol; ethanol; EDTA disodium salt; sodium sulfite; m-aminophenol; ammonia; sodium erythorbate; N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate; 2-(2,4-diaminophenoxy)ethanol dihydrochloride; N,N-dimethyloctadecylamine; 1,1'-oxydi-2-propanol)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate; 2-(2,4-diaminophenoxy)ethanol dihydrochloride)
Korea - KECI	No (N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate; 2-(2,4-diaminophenoxy)ethanol dihydrochloride)
New Zealand - NZIoC	Yes
Philippines - PICCS	No (N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate; 2-(2,4-diaminophenoxy)ethanol dihydrochloride)
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (cetostearyl alcohol; alcohols C16-18 ethoxylated; octadecyltrimethylammonium chloride; 2,5-diaminotoluene sulfate; N,N-[bis(hydroxyethyl)-p-phenylenediamine] sulfate; 2-(2,4-diaminophenoxy)ethanol dihydrochloride)
Vietnam - NCI	Yes
Russia - FBEPH	No (alcohols C16-18 ethoxylated; octadecyltrimethylammonium chloride; 2-(2,4-diaminophenoxy)ethanol dihydrochloride; N,N-dimethyloctadecylamine; 1,1'-oxydi-2-propanol)
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	16/05/2025
Initial Date	16/05/2025

Other information

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.

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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