

# Northfork Natures Orange Pumice Hand Cleaner

## ACCO Brands New Zealand Limited

Version No: 1.1  
Safety Data Sheet according to HSNO Regulations

Issue Date: 15/05/2022

S.GHS.NZL.EN

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

#### Product Identifier

Product name	Northfork Natures Orange Pumice Hand Cleaner
Synonyms	Not Available
Other means of identification	500ml - 637130300, 3.5L - 637130100, 5L - 637130700, 15L - 637130800

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

Relevant identified uses	Hand Degreaser
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#### Details of the supplier of the safety data sheet

Registered company name	ACCO Brands New Zealand Limited
Address	29 Pukekiwiriki Pl, Highbrook Business Park, East Tamaki, Auckland 2013
Telephone	+64 9 633 2288
Fax	+64 9 636 7272 / 0800 500 526
Website	www.accobrand.co.nz
Email	sds.anz@acco.com

#### Emergency telephone number


Association / Organisation	National Poisons Centre
Emergency telephone numbers	0800 764 766
Other emergency telephone numbers	0800 764 766

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

Classification [1]	Skin Corrosion/Irritation Category 3, Eye Irritation Category 2, Skin Sensitizer Category 1, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	6.3B, 6.5B (contact), 9.1C, 9.1D

#### Label elements

Hazard pictogram(s)	
Signal word	Warning

#### Hazard statement(s)

H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

#### Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.

#### Precautionary statement(s) Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fumes.

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<b>P273</b>	Avoid release to the environment.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.

### Precautionary statement(s) Response

<b>P321</b>	Specific treatment (see advice on this label).
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice/attention.
<b>P337+P313</b>	If eye irritation persists: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

<b>P501</b>	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
7732-18-5	>60	<u>water</u>
51981-21-6	<10	<u>tetrasodium N,N-bis(carboxymethyl)-L-glutamate</u>
9007-20-9	<10	<u>Carbomer</u>
61788-59-8	<10	<u>methyl cocoate</u>
166736-08-9	<10	<u>isodecanol propoxylated</u>
57-11-4	<10	<u>stearic acid</u>
61789-91-1	<10	<u>jojoba oil</u>
58-95-7	<10	<u>D-alpha-tocopherol acetate</u>
8039-09-6	<10	<u>lanolin ethoxylated</u>
6093-03-4	<10	<u>diphenyl phenol</u>
56-81-5	<10	<u>glycerol</u>
26542-23-4	<10	<u>4,5-dichloro-2-methyl-4-isothiazolin-3-one</u>
2634-33-5	<10	<u>1,2-benzisothiazoline-3-one</u>
102-71-6	<10	<u>triethanolamine</u>
1332-09-8	<10	<u>pumice</u>

## SECTION 4 First aid measures

### Description of first aid measures

<b>Eye Contact</b>	<ul style="list-style-type: none"> <li>Generally not applicable.</li> </ul>
<b>Skin Contact</b>	If skin contact occurs: <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

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

Treat symptomatically.

## SECTION 5 Firefighting measures

### Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

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<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles.</li> <li>▶ When heated to extreme temperatures, (&gt;1700 deg.C) amorphous silica can fuse.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>When aluminium oxide dust is dispersed in air, firefighters should wear protection against inhalation of dust particles, which can also contain hazardous substances from the fire absorbed on the alumina particles.</p> <p>May emit poisonous fumes.</p> <p>May emit corrosive fumes.</p>

## 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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Secure load if safe to do so.</li> <li>▶ Bundle/collect recoverable product.</li> <li>▶ Collect remaining material in containers with covers for disposal.</li> </ul>
<b>Major Spills</b>	<p>Minor hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment as required.</li> <li>▶ Prevent spillage from entering drains or water ways.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Wear protective clothing, safety glasses, dust mask, gloves.</li> <li>▶ Secure load if safe to do so. Bundle/collect recoverable product.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Water may be used to prevent dusting.</li> <li>▶ Collect remaining material in containers with covers for disposal.</li> </ul>

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

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Overheating of ethoxylates/ alkoxyates in air should be avoided. When some ethoxylates are heated vigorously in the presence of air or oxygen, at temperatures exceeding 160 C, they may undergo exothermic oxidative degeneration resulting in self-heating and autoignition.</li> <li>▶ Nitrogen blanketing will minimise the potential for ethoxylate oxidation. Prolonged storage in the presence of air or oxygen may cause product degradation. Oxidation is not expected when stored under a nitrogen atmosphere. Inert gas blanket and breathing system needed to maintain color stability. Use dry inert gas having at least -40 C dew point.</li> <li>▶ Trace quantities of ethylene oxide may be present in the material.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>▶ <b>DO NOT</b> allow material to contact humans, exposed food or food utensils.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT</b> eat, drink or smoke.</li> </ul>
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### Other information

- ▶ Store away from incompatible materials.

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p>For aluminas (aluminium oxide): Incompatible with hot chlorinated rubber. In the presence of chlorine trifluoride may react violently and ignite. -May initiate explosive polymerisation of olefin oxides including ethylene oxide. -Produces exothermic reaction above 200°C with halocarbons and an exothermic reaction at ambient temperatures with halocarbons in the presence of other metals. -Produces exothermic reaction with oxygen difluoride. -May form explosive mixture with oxygen difluoride. -Forms explosive mixtures with sodium nitrate. -Reacts vigorously with vinyl acetate.</p> <p>Silicas:</p> <ul style="list-style-type: none"> <li>▶ react with hydrofluoric acid to produce silicon tetrafluoride gas</li> <li>▶ react with xenon hexafluoride to produce explosive xenon trioxide</li> <li>▶ reacts exothermically with oxygen difluoride, and explosively with chlorine trifluoride (these halogenated materials are not commonplace industrial materials) and other fluorine-containing compounds</li> <li>▶ may react with fluorine, chlorates</li> <li>▶ are incompatible with strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate</li> <li>▶ may react vigorously when heated with alkali carbonates.</li> </ul> <p>None known</p>

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	stearic acid	Stearates	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	glycerol	Glycerin (mist)	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	triethanolamine	Triethanolamine	5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

#### Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
stearic acid	Octadecanoic acid, n-; (Stearic acid)	14 mg/m <sup>3</sup>	150 mg/m <sup>3</sup>	910 mg/m <sup>3</sup>
glycerol	Glycerine (mist); (Glycerol; Glycerin)	45 mg/m <sup>3</sup>	180 mg/m <sup>3</sup>	1,100 mg/m <sup>3</sup>
triethanolamine	Triethanolamine; (Trihydroxytriethylamine)	15 mg/m <sup>3</sup>	240 mg/m <sup>3</sup>	1,500 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
water	Not Available	Not Available
tetrasodium N,N-bis(carboxymethyl)-L-glutamate	Not Available	Not Available
Carbomer	Not Available	Not Available
methyl cocoate	Not Available	Not Available
isodecanol propoxylated	Not Available	Not Available
stearic acid	Not Available	Not Available
jojoba oil	Not Available	Not Available
D-alpha-tocopherol acetate	Not Available	Not Available
lanolin, ethoxylated	Not Available	Not Available
diphenyl phenol	Not Available	Not Available
glycerol	Not Available	Not Available
4,5-dichloro-2-methyl-4-isothiazolin-3-one	Not Available	Not Available
1,2-benzisothiazoline-3-one	Not Available	Not Available
triethanolamine	Not Available	Not Available
pumice	Not Available	Not Available

#### Occupational Exposure Banding


Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Carbomer	E	≤ 0.01 mg/m <sup>3</sup>

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Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
isodecanol propoxylated	E	≤ 0.1 ppm
jojoba oil	E	≤ 0.1 ppm
D-alpha-tocopherol acetate	E	≤ 0.1 ppm
lanolin, ethoxylated	E	≤ 0.01 mg/m <sup>3</sup>
diphenyl phenol	E	≤ 0.01 mg/m <sup>3</sup>
4,5-dichloro-2-methyl-4-isothiazolin-3-one	E	≤ 0.1 ppm
1,2-benzisothiazoline-3-one	E	≤ 0.01 mg/m <sup>3</sup>
<b>Notes:</b>	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

## Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<p>No special equipment required due to the physical form of the product.</p> <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. 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.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>Wear general protective gloves, eg. light weight rubber gloves.</p> <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>No special equipment required due to the physical form of the product.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>

## 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:

Hand Degreaser

Material	CPI
BUTYL	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
PVA	C
PVC	C

## Respiratory protection

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

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VITON	C
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\* 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.

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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

Appearance	A white liquid		
Physical state	liquid	Relative density (Water = 1)	0.98-1.02
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	6-8	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

## SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	Product is considered stable and 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

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### SECTION 11 Toxicological information

#### Information on toxicological effects

Inhaled	<p>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.</p> <p>Not normally a hazard due to non-volatile nature of product</p> <p>Workers exposed to terphenyl and its isomers are associated with ocular and respiratory tract irritation. Higher concentrations were lethal and produced both respiratory diseases and damaging effect on the system.</p>
Ingestion	<p>Acute toxic responses to aluminium are confined to the more soluble forms.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p> <p>In a 14-day dietary study, young rats fed 0.2% of the various isomers of terphenyl showed increased plasma cholesterol, low body weight (o-, and m- isomers), liver hypertrophy (m-isomer) and adrenal hypertrophy (o-isomer).</p> <p>Nonionic surfactants may produce localised irritation of the oral or gastrointestinal lining and induce vomiting and mild diarrhoea.</p>
Skin Contact	<p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Though considered non-harmful, slight irritation may result from contact because of the abrasive nature of the aluminium oxide particles. Thus it may cause itching and skin reaction and inflammation.</p> <p>Topical application of terphenyl and its isomers may produce a damaging effect on the skin (irritation, sensitisation, scarring and skin death) depending on the animal involved.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>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.</p>
Eye	<p>Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).</p> <p>Application of terphenyl to rabbit's eye can cause extreme conjunctival irritation.</p> <p>Non-ionic surfactants can cause numbing of the cornea, which masks discomfort normally caused by other agents and leads to corneal injury.</p> <p>Irritation varies depending on the duration of contact, the nature and concentration of the surfactant.</p>
Chronic	<p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Animal testing shows long term exposure to aluminium oxides may cause lung disease and cancer, depending on the size of the particle. The smaller the size, the greater the tendencies of causing harm.</p> <p>Exposure to large doses of aluminium has been connected with the degenerative brain disease Alzheimer's Disease.</p> <p>Workers repeatedly exposed to terphenyl developed non-specific readily reversible skin rash. Feeding trials in rats with un-irradiated mixtures of the isomers of terphenyl showed low body weight, reduced haemoglobin and damaging effect on the kidney.</p> <p>Amorphous silicas generally are less hazardous than crystalline silicas, but the former can be converted to the latter on heating and subsequent cooling. Inhalation of dusts containing crystalline silicas may lead to silicosis, a disabling lung disease that may take years to develop.</p>

Hand Degreaser	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
water	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available
tetrasodium N,N-bis(carboxymethyl)- L-glutamate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Eye : Mild *
		Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
		Skin : Not irritating *
Carbomer	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >3000 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irreversible damage) <sup>[1]</sup>
	Oral (rat) LD50: >1000 mg/kg <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >2500 mg/kg <sup>[2]</sup>	
methyl cocoate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
isodecanol propoxylated	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Eye: moderate to SEVERE*
		Skin (rabbit): irritant (OECD 404)*
		Skin : Moderate

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stearic acid	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (human): 75 mg/3d-I-mild
		Skin (rabbit): 500 mg/24h-moderate
jojoba oil	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
D-alpha-tocopherol acetate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >16000 mg/kg <sup>[2]</sup>	Eye (rabbit): non-irritating *
		Skin (rabbit): non-irritating *
lanolin, ethoxylated	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >21300 mg/kg <sup>[2]</sup>	Eye (rabbit): non-irritating *
		Skin (rabbit): non-irritating *
diphenyl phenol	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Not Available
glycerol	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (mouse) LD50: ~23000 mg/kg <sup>[2]</sup>	Not Available
	Oral (mouse) LD50: ~26000 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: =12600 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: >10000 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 27200 mg/kg <sup>[2]</sup>	
4,5-dichloro-2-methyl-4-isothiazolin-3-one	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
1,2-benzisothiazoline-3-one	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 1020 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irreversible damage) <sup>[1]</sup>
	Oral (rat) LD50: 670 mg/kg <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: 784 mg/kg <sup>[2]</sup>	
triethanolamine	<b>TOXICITY</b>	<b>IRRITATION</b>
	=1125 mg/kg <sup>[2]</sup>	Eye (rabbit): 0.1 ml -
	2200 mg/kg <sup>[2]</sup>	Eye (rabbit): 10 mg - mild
	dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup>	Eye (rabbit): 5.62 mg - SEVERE
	Oral (guinea pig) LD50: =2200 mg/kg <sup>[2]</sup>	minor conjunctival irritation
	Oral (guinea pig) LD50: 5300 mg/kg <sup>[2]</sup>	no irritation *
	Oral (mouse) LD50: =5200 mg/kg <sup>[2]</sup>	Skin (human): 15 mg/3d (int)-mild
	Oral (mouse) LD50: =7400 mg/kg <sup>[2]</sup>	Skin (rabbit): 4 h occluded
	Oral (mouse) LD50: 5846 mg/kg <sup>[2]</sup>	Skin (rabbit): 560 mg/24 hr- mild
	Oral (rabbit) LD50: =2200 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: ~4200 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 4190 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 4920 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 7390 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 8000 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 8570 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 9000 mg/kg <sup>[2]</sup>	
	Oral (rat) LD50: 9100 mg/kg <sup>[2]</sup>	
pumice	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

**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



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<b>TETRASODIUM N,N-BIS(CARBOXYMETHYL)- L-GLUTAMATE</b>	for a similar product containing 71% GLDA-Na4 Not irritating to rabbit skin after a 4 hour exposure to 0.5 ml (164 mg). The Primary Irritation Index was 0.0 Minimally irritating to rabbit eyes following the installation of 0.1 ml (31 mg). The maximum irritation score was 3.3 Not sensitising to guinea pig skin (75% GLDA-Na4) Negative in the Ames CHO HGPRT forward mutation and micronucleus test. Weakly clastogenic to CHL cells in vitro - In a 90-day oral gavage study, GLDA induced reversible changes in some blood and urine parameters without concomitant microscopic changes in kidneys or other organs, The NOAEL is 300 mg/kg/day * Akzo Nobel SDS
<b>CARBOMER</b>	<p>Polycarboxylates are of low toxicity by all exposure routes examined.</p> <p>Homopolymers(P-AA) are of low acute toxicity to the rat (LD50 &gt; 5 g/kg bw/d) and are not irritating to the rabbit's skin and, at the most, slightly irritating to the eye. Further P-AA has no sensitising potential.</p> <p>The adverse effect after repeated inhalation dosing (91-d/rat) was a mild, reversible pulmonary irritation. This effect is considered as not substance related owing to the physical property of the respirable dust, which caused local and not systemic lung effects.</p> <p>There was neither evidence for a genotoxic potential of PAA using a variety of genetic endpoints in-vitro and in-vivo, nor for developmental toxicity or reprotoxicity in the rat. Based upon the available data, it is considered that exposure to polycarboxylates does not imply any particular hazard to humans</p> <p>The Cosmetic Ingredient Review (CIR) Expert Panel noted that these crosslinked alkyl acrylates are macromolecules that are not expected to pass through the stratum corneum of the skin, so significant dermal absorption is not expected. Therefore, topically applied cosmetics are not expected to result in systemic or reproductive and developmental toxicity or to have genotoxic or carcinogenic effects upon use.</p> <p>The Panel noted that cosmetic products containing these ingredients are reportedly used around the eyes, on the lips, and on other mucous membranes. Thus, crosslinked alkyl acrylates could be absorbed systemically through the relatively moist, stratum cornea of the conjunctiva, lips, and other mucous membranes, and through ingestion when applied to the lips. However, the Panel noted that any absorption through healthy intact mucous membranes is likely to be not significant, primarily because of the relatively large molecular sizes. Furthermore, the chemically inert nature of the polymers precludes degradation to smaller absorbable species.</p> <p>Absorption of the polymers and their residual monomers in cosmetic products also would be limited after application to the lips or eye area based on the relatively small fractions of the applied products that might be inadvertently ingested or make direct contact with the conjunctiva.</p> <p>The Carbomers (Carbopols) are synthetic, high molecular weight, nonlinear polymers of acrylic acid, cross-linked with a polyalkenyl polyether. The Carbomer polymers are used in cosmetics and emulsifying agents at concentrations up to 50%. Acute oral animal studies showed that Carbomers-910, -934, -934P, -940, and -941 have low toxicities when ingested. Rabbits showed minimal skin irritation and zero to moderate eye irritation when tested with Carbomers-910 and -934. Subchronic feeding of rats and dogs with Carbomer-934 in the diet resulted in lower than normal body weights, but no pathological changes were observed. Dogs chronically fed Carbomer-934P manifested gastrointestinal irritation and marked pigment deposition within Kupffer cells of the liver.</p>
<b>METHYL COCOATE</b>	<p>Animal studies showed that at very high concentrations (greater than 2 grams per litre), toxic effects such as hair loss and discolouration of urine were seen.</p> <p>Research contends that exhaust from pure canola oil biodiesel is more lethal for human epithelial cells than that from traditional diesel. These cells form the lining of the airways and lungs, and are the body's first line of defence against viruses and particles capable of invading the body. Research has found that the extremely fine size of fuel exhaust particles from refined and blended canola oil could lead to respiratory health problems.</p> <p>Animal testing suggests that biodiesel is more toxic than diesel, because it caused changes to the cardiovascular system as well as lung and whole-body inflammation.</p> <p>Group A aliphatic monoesters (fatty acid esters) cause very little or no injury and are considered safe for use in cosmetics.</p>
<b>STEARIC ACID</b>	Equivocal tumorigen by RTEC criteria
<b>JOJOBA OIL</b>	<p>Governments worldwide have been moving away from oils with high levels of erucic acid, and tolerance levels for human exposure to erucic acid have been established based on the animal studies.</p> <p>Although laboratory animals show that erucic acid appears to have toxic effects on the heart at high enough doses, an association between the consumption of rapeseed oil and increased myocardial lipidosis or heart disease has not been established for humans. While there are reports of toxicity from long-term use of Lorenzo's oil (which contains erucic acid and other ingredients), there are no reports of harm to people from dietary consumption of erucic acid.</p> <p>Food Standards Australia set a provisional tolerable daily intake (PTDI) of about 500 mg/day of erucic acid, based on "the level that is associated with increased myocardial lipidosis in nursing pigs. There is a 120-fold safety margin between this level and the level that is associated with increased myocardial lipidosis in nursing pigs. The dietary exposure assessment has concluded that the majority of exposure to erucic acid by the general population would come from the consumption of canola oil. The dietary intake of erucic acid by an individual consuming at the average level is well below the PTDI, therefore, there is no cause for concern in terms of public health and safety. However, the individual consuming at a high level has the potential to approach the PTDI. This would be particularly so if the level of erucic acid in canola oil is ] to exceed 2% of the total fatty acids.</p> <p>Food-grade rapeseed oil (also known as canola oil, rapeseed oil, low erucic acid rapeseed oil, LEAR oil, and rapeseed canola-equivalent oil) is regulated to a maximum of 2% erucic acid by weight in the USA and 5% in the EU, with special regulations for infant food.</p> <p>For group E aliphatic esters (polyol esters):</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Reproductive and developmental toxicity: This group should not produce profound reproductive effects in animals.</p> <p>Genetic toxicity: Tests have shown this group to be inactive. It is unlikely that these substances cause mutations.</p> <p>Cancer-causing potential: No association between this group of substances and cancer.</p>
<b>D-ALPHA-TOCOPHEROL ACETATE</b>	<p>alpha-Tocopherol was non-mutagenic and non-carcinogenic, and the results of reproduction/ teratology studies did not indicate that alpha-tocopherol had adverse effects on reproductive function. However, in a long-term study in rats, a no-effect level could not be established with respect to effects on blood clotting and liver histology, and there was evidence from human studies that excessive intakes of alpha-tocopherol could cause haemorrhage. Other adverse effects noted in clinical studies at doses of &gt; 720 mg alpha-tocopherol/day included weakness, fatigue, creatinuria and effects on steroid hormone metabolism.</p> <p>Clinical studies indicate that, generally, intakes of below about 720 mg/day are without adverse effects in man, but one investigation in elderly patients showed an increase in serum cholesterol at doses of 300 mg alpha-tocopherol daily. Incidences of allergic reactions seem to be very rare.</p> <p>alpha-Tocopherol may be an essential nutrient. The U.S. National Academy of Sciences/National Research Council has recommended a dietary allowance of 0.15 mg/kg b.w./day. However, excessive intakes of alpha-tocopherol produce adverse clinical and biochemical effects, and self-medication with large doses of vitamin E preparations could present a hazard.</p> <p>The previously-allocated ADI was amended to include a lower value, which reflects the fact that alpha-tocopherol may be an essential nutrient. The upper value, which represents the maximum value for the ADI, is based on clinical experience in man.</p> <p>IPCS Inchem: <a href="http://www.inchem.org/documents/jecfa/jecmono/v21je05.htm">http://www.inchem.org/documents/jecfa/jecmono/v21je05.htm</a> for DL-form</p>
<b>LANOLIN, ETHOXYLATED</b>	* [Emery Chemical Co.]

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GLYCEROL	At very high concentrations, evidence predicts that glycerol may cause tremor, irritation of the skin, eyes, digestive tract and airway. Otherwise it is of low toxicity. There is no significant evidence to suggest that it causes cancer, genetic, reproductive or developmental toxicity.
4,5-DICHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
1,2-BENZISOTHIAZOLINE-3-ONE	<p><b>Acute toxicity</b> data show that 1,2-benzisothiazoline-3-one (BIT) is moderately toxic by the oral and dermal routes but that this chemical is a severe eye irritant. Irritation to the skin from acute data show only mild skin irritation, but repeated dermal application indicated a more significant skin irritation response.</p> <p>The neurotoxicity observed in the rat acute oral toxicity study (piloerection and upward curvature of the spine at 300 mg/kg and above; decreased activity, prostration, decreased abdominal muscle tone, reduced righting reflex, and decreased rate and depth of breathing at 900 mg/kg) and the acute dermal toxicity study (upward curvature of the spine was observed in increased incidence, but this was absent after day 5 post-dose at a dose of 2000 mg/kg) were felt to be at exposures in excess of those expected from the use pattern of this pesticide and that such effects would not be observed at estimated exposure doses.</p> <p><b>Subchronic oral toxicity</b> studies showed systemic effects after repeated oral administration including decreased body weight, increased incidence of forestomach hyperplasia, and non-glandular stomach lesions in rats. In dogs, the effects occurred at lower doses than in rats, and included alterations in blood chemistry (decreased plasma albumin, total protein, and alanine aminotransferase) and increased absolute liver weight.</p> <p><b>Developmental toxicity</b> studies were conducted in rats with maternal effects including decreased body weight gain, decreased food consumption, and clinical toxicity signs (audible breathing, haircoat staining of the anogenital region, dry brown material around the nasal area) as well as increased mortality. Developmental effects consisted of increases in skeletal abnormalities (extra sites of ossification of skull bones, unossified sternebrae) but not external or visceral abnormalities.</p> <p><b>Reproductive toxicity:</b> In a two-generation reproduction study, parental toxicity was observed at 500 ppm and was characterized by lesions in the stomach. In pups, toxic effects were reported at 1000 ppm and consisted of preputial separation in males and impaired growth and survival in both sexes. The reproduction study did not show evidence of increased susceptibility of offspring.</p>
TRIETHANOLAMINE	<p>Overexposure to most of these materials may cause adverse health effects.</p> <p>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.</p> <p>There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing.</p> <p>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.</p> <p>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.</p> <p>Products with higher vapour pressures may reach higher concentrations in the air, and this increases the likelihood of worker exposure.</p> <p>Inhalation hazards are increased when exposure to amine catalysts occurs in situations that produce aerosols, mists or heated vapours. Studies done show that triethanolamine is of low toxicity following high dose exposure by swallowing, skin contact or inhalation. It has not been shown to cause cancer, genetic defects, reproductive or developmental toxicity.</p> <p>A Cosmetic Ingredient Review (CIR) expert panel conducted a review of triethanolamine-containing personal care products</p> <p>The panel was concerned with the levels of free diethanolamine that could be present as an impurity in TEA or TEA-containing ingredients.</p> <p>The panel stated that the amount of free diethanolamine available must be limited to the present practices of use and concentration of diethanolamine.</p> <p>The Panel concluded that TEA and 31 related TEA-containing ingredients, are safe when formulated to be nonirritating and when the levels of free diethanolamine do not exceed the prescribed levels. These ingredients should not be used in cosmetic products in which N-nitroso compounds can be formed.</p> <p>Dermal carcinogenicity studies performed by the NTP on TEA reported equivocal evidence of carcinogenic activity in male mice based on the occurrence of liver hemangiosarcoma, some evidence of carcinogenic activity in female mice based on increased incidences of hepatocellular adenoma, and equivocal evidence of carcinogenic activity in male rats based on a marginal increase in the incidence of renal tubule cell adenoma. It has been hypothesized that TEA may cause liver tumours in mice via a choline-depletion mode of action. Humans are much less sensitive to this deficiency, and these hepatic findings are considered to have little relevance to humans regarding the safety of the use of TEA in personal care products.</p> <p>The panel was concerned that the potential exists for dermal irritation with the use of products formulated using TEA or TEA-related ingredients. The panel specified that products containing these ingredients must be formulated to be nonirritating.</p> <p>Tertiary alkyl amines such as TEA do not react with N-nitrosating agents to directly form nitrosamines. However, tertiary amines can act as precursors in nitrosamine formation by undergoing nitrosative cleavage. The resultant secondary amine (ie, diethanolamine) can then be N-nitrosated to products that may be carcinogenic. Because of the potential for this process to occur, TEA and TEA-containing ingredients should not be used in cosmetic products in which N-nitroso compounds can be formed.</p> <p>Safety Assessment of Triethanolamine and Triethanolamine-Containing Ingredients as Used in Cosmetics: International Journal of Toxicology (supplement 1) 59S-83S.</p> <p>The substance is classified by IARC as Group 3:</p> <p><b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> <p><b>NOTE:</b> 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.</p> <p>Lachrymation, diarrhoea, convulsions, urinary tract changes, changes in bladder weight, changes in testicular weight, changes in thymus weight, changes in liver weight, dermatitis after systemic exposure, kidney, ureter, bladder tumours recorded. Equivocal tumourigen by RTECS criteria. Dermal rabbit value quoted above is for occluded patch in male or female animals * Union Carbide</p>
PUMICE	<p>The most dangerous operations involving exposure to pumice are kiln drying and sifting because of the large amount of dust produced. Apart from the characteristic signs of silicosis observed in the lungs and sclerosis of the hilar lymphatic glands, the study of some fatal cases have revealed respiratory disorders (emphysema and sometimes pleural damage), cardiovascular disorders (cor pulmonale) and renal disorders (albuminuria, haematuria, cylindruria), as well as signs of adrenal deficiency. Radiological evidence of aortitis is more common and serious than in the case of silicosis. A typical radiological appearance of lungs in liparitis is the presence of linear thickening due to laminar atelectosis. Pneumoconiosis was found in pumice stone workers, in Italy, within a few years to decades of initial exposure.</p>
Hand Degreaser & DIPHENYL PHENOL & 4,5-DICHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE & 1,2-BENZISOTHIAZOLINE-3-ONE & TRIETHANOLAMINE	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>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>

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<b>Hand Degreaser &amp; ISODECANOL PROPOXYLATED</b>	The effects of similar substances have been characterised.
<b>Hand Degreaser &amp; ISODECANOL PROPOXYLATED &amp; LANOLIN, ETHOXYLATED</b>	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. 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.
<b>Hand Degreaser &amp; WATER &amp; CARBOMER &amp; METHYL COCOATE &amp; JOJOBA OIL &amp; DIPHENYL PHENOL &amp; 4,5-DICHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; PUMICE</b>	No significant acute toxicological data identified in literature search.
<b>Hand Degreaser &amp; PUMICE</b>	For silica amorphous: Derived No Adverse Effects Level (NOAEL) in the range of 1000 mg/kg/d. In humans, synthetic amorphous silica (SAS) is essentially non-toxic by mouth, skin or eyes, and by inhalation. Epidemiology studies show little evidence of adverse health effects due to SAS. Repeated exposure (without personal protection) may cause mechanical irritation of the eye and drying/cracking of the skin. When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated. If swallowed, the vast majority of SAS is excreted in the faeces and there is little accumulation in the body. Following absorption across the gut, SAS is eliminated via urine without modification in animals and humans. SAS is not expected to be broken down (metabolised) in mammals. After ingestion, there is limited accumulation of SAS in body tissues and rapid elimination occurs. Intestinal absorption has not been calculated, but appears to be insignificant in animals and humans. SASs injected subcutaneously are subjected to rapid dissolution and removal.
<b>CARBOMER &amp; STEARIC ACID &amp; JOJOBA OIL &amp; DIPHENYL PHENOL &amp; GLYCEROL &amp; 4,5-DICHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; TRIETHANOLAMINE</b>	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.
<b>CARBOMER &amp; TRIETHANOLAMINE</b>	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
<b>CARBOMER &amp; STEARIC ACID &amp; 4,5-DICHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE &amp; TRIETHANOLAMINE</b>	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.
<b>METHYL COCOATE &amp; JOJOBA OIL</b>	Polyunsaturated fats (PUFAs) protect against heart disease by providing more membrane fluidity than monounsaturated fats (MUFAs), but they are more vulnerable to being oxidized and therefore rancid. Foods containing monounsaturated fats reduce low-density lipoprotein (LDL) cholesterol, while possibly increasing high-density lipoprotein (HDL) cholesterol. Levels of oleic, and other monounsaturated fatty acids in red blood cell membranes were positively associated with breast cancer risk. In children, consumption of monounsaturated oils is associated with healthier blood lipid profiles. The diet in Mediterranean countries consists of more total fat than the diets of Northern European countries, but most of the fat is made up of monounsaturated fatty acids from olive oil and omega-3 fatty acids (PUFAs) from fish and vegetables, and very little saturated fat.

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

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

## SECTION 12 Ecological information

## Toxicity

Hand Degreaser	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
water	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
tetrasodium N,N-bis(carboxymethyl)-L-glutamate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	>95.26mg/L	2

Continued...

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	EC50	48	Crustacea	>95.26mg/L	2
	NOEC	216	Fish	94.55mg/L	2
Carbomer	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	27mg/L	2
	EC50	48	Crustacea	47mg/L	2
	EC50	72	Algae or other aquatic plants	0.75mg/L	2
	NOEC	72	Algae or other aquatic plants	0.03mg/L	2
methyl cocoate	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
isodecanol propoxylated	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
stearic acid	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	>4.8mg/L	2
	EC50	72	Algae or other aquatic plants	>0.9mg/L	2
	NOEC	504	Crustacea	>0.22mg/L	2
jojoba oil	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72	Algae or other aquatic plants	>100mg/L	2
	NOEC	72	Algae or other aquatic plants	>100mg/L	2
D-alpha-tocopherol acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
lanolin, ethoxylated	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
diphenyl phenol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	0.159mg/L	2
	EC0	48	Crustacea	0.14mg/L	2
glycerol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	>0.011-mg/L	2
4,5-dichloro-2-methyl-4-isothiazolin-3-one	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
1,2-benzisothiazoline-3-one	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	1.6mg/L	2
	EC50	48	Crustacea	2.9mg/L	2
	EC50	72	Algae or other aquatic plants	0.0403mg/L	2
	NOEC	72	Algae or other aquatic plants	0.055mg/L	2
triethanolamine	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	11-800mg/L	2
	EC50	48	Crustacea	609.88mg/L	2
	EC50	96	Algae or other aquatic plants	169mg/L	1
	EC0	24	Crustacea	1-530mg/L	2
	NOEC	504	Crustacea	16mg/L	1
pumice	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 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				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Continued...

## Northfork Natures Orange Pumice Hand Cleaner

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.

The effects of similar substances have been characterised.

For Alcohol Ethoxylates (AE):

Environmental Fate: AEs are commonly found in surfactants, are generally biodegradable, and do not persist for any substantial period in the environment. They are not usually present at concentrations which might produce problems.

Terrestrial Fate: The adsorption of AEs in soil decreases as pH increases. These substances will be broken down by microorganisms in the presence of oxygen.

Breakdown in the Environment (Biodegradation): AE with a typical alkyl chain, (e.g., C12 to C15), will normally reach more than 60% degradation in standardized tests for ready biodegradability. However, the presence of longer chain ethylene oxide components may reduce the ability of microorganisms to break the substance down. Branched AEs degrade slower than linear AEs. These substances are rapidly degraded by oxygen dependent microorganisms.

For Mixed Terphenyls and Quaterphenyls:

Environmental Fate: Environmental fate of these substances is expected to be focused primarily in the soil and sediment compartments.

Terrestrial Fate: These chemicals are expected to extensively degrade. Half-lives in soil range between 8-12 weeks. Mixed terphenyls and quaterphenyls are solid and waxy at room temperature and possess exceedingly low vapor pressures. Waxiness increases as vapor pressure decreases and molecular weight increases.

Aquatic Fate: All water solubility values for mixed terphenyls, its isomeric components and the quaterphenyls, establish this category of chemicals as possessing very low water solubility. None of these chemicals are readily hydrolysable; all have exceedingly low water solubility characteristics, and would be expected to undergo limited photolysis in the environment.

Ecotoxicity: Mixed terphenyls biodegrade slowly in the environment and are slightly toxic to *Daphnia magna* water fleas, rainbow trout and fathead minnow.

For Aluminium and its Compounds and Salts:

Environmental Fate - As an element, aluminium cannot be degraded in the environment, but may undergo various precipitation or ligand exchange reactions. Aluminium in compounds has only one oxidation state (+3), and would not undergo oxidation-reduction reactions under environmental conditions. Aluminium can be complexed by various ligands present in the environment (e.g., fulvic and humic acids). The solubility of aluminium in the environment will depend on the ligands present and the pH.

Atmospheric Fate: Air Quality Standards: none available.

Aquatic Fate: The hydrated aluminium ion undergoes hydrolysis. The speciation of aluminium in water is pH dependent. The hydrated trivalent aluminium ion is the predominant form at pH levels below 4.

For Amorphous Silica: Amorphous silica is chemically and biologically inert. It is not biodegradable.

Aquatic Fate: Due to its insolubility in water there is a separation at every filtration and sedimentation process. On a global scale, the level of man-made synthetic amorphous silicas (SAS) represents up to 2.4% of the dissolved silica naturally present in the aquatic environment and untreated SAS have a relatively low water solubility and an extremely low vapour pressure. Biodegradability in sewage treatment plants or in surface water is not applicable to inorganic substances like SAS.

Terrestrial Fate: Crystalline and/or amorphous silicas are common on the earth in soils and sediments, and in living organisms (e.g. diatoms), but only the dissolved form is bioavailable. On the basis of these properties it is expected that SAS released into the environment will be distributed mainly into soil/sediment. Surface treated silica will be wetted then adsorbed onto soils and sediments.

For Silica:

Environmental Fate: Most documentation on the fate of silica in the environment concerns dissolved silica, in the aquatic environment, regardless of origin, (man-made or natural), or structure, (crystalline or amorphous).

Terrestrial Fate: Silicon makes up 25.7% of the Earth's crust, by weight, and is the second most abundant element, being exceeded only by oxygen. Silicon is not found free in nature, but occurs chiefly as the oxide and as silicates. Once released into the environment, no distinction can be made between the initial forms of silica.

Aquatic Fate: At normal environmental pH, dissolved silica exists exclusively as monosilicic acid. At pH 9.4, amorphous silica is highly soluble in water. Crystalline silica, in the form of quartz, has low solubility in water. Silicic acid plays an important role in the biological/geological/chemical cycle of silicon, especially in the ocean.

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
water	LOW	LOW
Carbomer	LOW	LOW
stearic acid	LOW	LOW
glycerol	LOW	LOW
triethanolamine	LOW	LOW

### Bioaccumulative potential

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)
Carbomer	LOW (LogKOW = 0.4415)
stearic acid	LOW (LogKOW = 8.23)
glycerol	LOW (LogKOW = -1.76)
triethanolamine	LOW (BCF = 3.9)

### Mobility in soil

Ingredient	Mobility
water	LOW (KOC = 14.3)
Carbomer	HIGH (KOC = 1.201)
stearic acid	LOW (KOC = 11670)
glycerol	HIGH (KOC = 1)
triethanolamine	LOW (KOC = 10)

## SECTION 13 Disposal considerations

### Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>Containers may still present a chemical hazard/ danger when empty.</li> <li>Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>
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**Northfork Natures Orange Pumice Hand Cleaner**

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- |  |   |
|--|---|
|  | <ul style="list-style-type: none"><li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li><li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li><li>▶ Consult State Land Waste Management Authority for disposal.</li><li>▶ Bury residue in an authorised landfill.</li><li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li></ul> |
|--|---|

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

**Disposal Requirements**

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

Only dispose to the environment if a tolerable exposure limit has been set for the substance.

Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

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**SECTION 14 Transport information**

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**Labels Required**

Marine Pollutant	NO
HAZCHEM	Not Applicable

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

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

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

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

Not Applicable

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**SECTION 15 Regulatory information**

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

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002530	Cleaning Products (Subsidiary Hazard) Group Standard 2020

## Northfork Natures Orange Pumice Hand Cleaner

### water is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### tetrasodium N,N-bis(carboxymethyl)-L-glutamate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### Carbomer is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

### methyl cocoate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### isodecanol propoxylated is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### stearic acid is found on the following regulatory lists

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

### jojoba oil is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### D-alpha-tocopherol acetate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### lanolin, ethoxylated is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### diphenyl phenol is found on the following regulatory lists

Not Applicable

### glycerol is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

### 4,5-dichloro-2-methyl-4-isothiazolin-3-one is found on the following regulatory lists

Not Applicable

### 1,2-benzisothiazoline-3-one is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

### triethanolamine is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

### pumice is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

### Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
Not Applicable	Not Applicable	Not Applicable

### Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

### Tracking Requirements

Not Applicable

### National Inventory Status

Continued...

## Northfork Natures Orange Pumice Hand Cleaner

National Inventory	Status
Australia - AIIC	Yes
Australia Non-Industrial Use	No (water; tetrasodium N,N-bis(carboxymethyl)-L-glutamate; Carbomer; methyl cocoate; isodecanol propoxylated; stearic acid; jojoba oil; D-alpha-tocopherol acetate; lanolin, ethoxylated; diphenyl phenol; glycerol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; 1,2-benzisothiazoline-3-one; triethanolamine; pumice)
Canada - DSL	No (isodecanol propoxylated; diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Canada - NDSL	No (water; tetrasodium N,N-bis(carboxymethyl)-L-glutamate; Carbomer; methyl cocoate; isodecanol propoxylated; stearic acid; jojoba oil; D-alpha-tocopherol acetate; lanolin, ethoxylated; diphenyl phenol; glycerol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; 1,2-benzisothiazoline-3-one; triethanolamine; pumice)
China - IECSC	No (diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Europe - EINEC / ELINCS / NLP	No (Carbomer; isodecanol propoxylated; lanolin, ethoxylated; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; pumice)
Japan - ENCS	No (tetrasodium N,N-bis(carboxymethyl)-L-glutamate; methyl cocoate; isodecanol propoxylated; jojoba oil; diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; pumice)
Korea - KECI	No (jojoba oil; diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
New Zealand - NZIoC	No (diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Philippines - PICCS	No (isodecanol propoxylated; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
USA - TSCA	No (diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Taiwan - TCSI	No (4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Mexico - INSQ	No (tetrasodium N,N-bis(carboxymethyl)-L-glutamate; methyl cocoate; isodecanol propoxylated; jojoba oil; lanolin, ethoxylated; diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; pumice)
Vietnam - NCI	No (4,5-dichloro-2-methyl-4-isothiazolin-3-one)
Russia - ARIPS	No (methyl cocoate; isodecanol propoxylated; jojoba oil; lanolin, ethoxylated; diphenyl phenol; 4,5-dichloro-2-methyl-4-isothiazolin-3-one; pumice)
<b>Legend:</b>	<p>Yes = All CAS declared ingredients are on the inventory</p> <p>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</p>

## SECTION 16 Other information

### 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  
 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

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