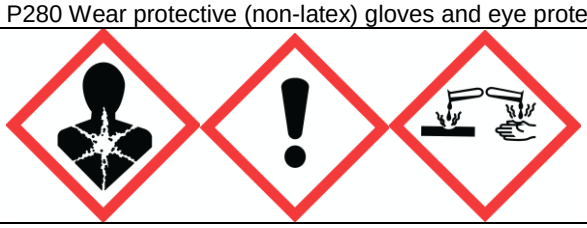
1.0 Identification

Product identifier	**Dermcare MALASEB® Medicated Shampoo**
Other means of identification	ACVM approval number: A7641 Active constituents: 20g/L Chlorhexidine Gluconate, 20g/L Miconazole Nitrate
Recommended use & restrictions on use	**This SDS applies to handling, storage and use of this substance in workplace environments.** Other use will have different requirements not addressed herein. VETERINARY APPLICATION: Topical keratolytic, antibacterial, antifungal, and antipruritic shampoo for dogs and cats.
Details of manufacturer / importer	**DECHRA NZ LTD** PO Box 1604, Parparaumu Beach, NEW ZEALAND Phone: 0800 479 838 Email: info.nz@dechra.com Website: http://www.dechra.co.nz
Emergency phone number	Poisons Information 0800 764 766

2.0 GHS Hazard Identification

Classification of the hazardous chemical	Acute toxicity, oral Category 5 Sensitisation, skin Category 1 Serious eye damage/eye irritation Category 1 Sensitisation, respiratory Category 1
Signal word	**DANGER**
Hazard statement	H303 May be harmful if swallowed H317 May cause an allergic skin reaction H318 Causes serious eye damage H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
Precautionary statements	P261 Avoid breathing vapour. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective (non-latex) gloves and eye protection/face protection.
GHS pictograms	

3.0 Ingredients / Composition %w/w

Ingredient Name / Nature	0<1	1<10	>10	>20	>30	>40	>50	>60	>70	>80	>90
Chlorhexidine Gluconate											
Miconazole Nitrate											
Surfactants											

4.0 First Aid Measures

First aid instructions	Consider your own safety first. For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.
Swallowed	IF SWALLOWED: Do NOT induce vomiting. Rinse mouth with water and spit. Give a glass of water. Seek medical advice.
Eye	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or a doctor/physician.
Skin	IF ON SKIN: Wash with plenty of water, if skin irritation or rash occurs get medical advice/attention. Take off contaminated clothing and wash it before reuse. Discontinue use if allergic reaction is suspected.
Inhaled	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms call a POISON CENTER or a doctor/physician.
Symptoms caused by exposure	**Chlohexidine Gluconate** has been reported as causative agent of contact dermatitis, hives (urticaria), shortness of breath (dyspnoea) and anaphylactic shock. **Miconazole Nitrate** by ingestion: anorexia, nausea, vomiting and diarrhoea. Local irritation reactions and potentially hyperlipidaemia, drowsiness, febrile reactions, hyponatraemia, acute psychosis, arthralgia and anaphylaxis. **Surfactants**: incidents involving oral exposure have resulted in irritation to the mouth/throat/nose, vomiting/nausea/abdominal pain, dizziness, and headache; incidents involving inhalation exposure resulted in respiratory irritation/burning, irritation to the mouth/throat/nose, coughing/choking, chest pain, disorientation, dizziness & shortness of breath. Irritation/burning, rash, itching and blistering noted during incidental dermal exposure. Hives and allergic contact dermatitis were also noted following dermal exposure. Incidental exposure of eyes resulted in irritation/burning, eye pain, conjunctivitis, eye, and eyelid swelling.

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Medical Attention / Special Treatment	Treat symptomatically.

5.0 Fire Fighting Measures

Extinguishing media	Extinguishing media appropriate to surrounding fire conditions.
Specific hazards arising from the chemical	On burning will emit toxic fumes, including those of oxides of carbon.
Special protective equipment & precautions for fire fighters HAZCHEM	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion. Keep containers cool with water spray.

6.0 Accidental Release Measures

Personal precautions, protective equipment & emergency procedures	Do not use if you are allergic to any of the ingredients. Avoid breathing vapour or mist. Wear protective (non-latex) gloves and eye protection. Contaminated work clothing should not be allowed out of the workplace. Rinse all skin thoroughly clean under running water after use.
Environmental precautions	Avoid discharging large quantities to drain or open waterways.
Methods & materials for containment & cleaning up	Will cause hard surfaces to become slippery. Do NOT apply high-pressure water as this may cause excessive foaming. Collect excess material into disposable absorbent materials, dispose as solid waste, then dilute excess with water and wipe up residual materials.

7.0 Storage & Handling

Precautions for safe handling	Prepare the work area; ensure adequate ventilation and a slip resistant workspace. Protect your eyes and skin from avoidable contact with solution.
Safe storage practice	Read safety directions before opening or using.
- Avoid	Avoid mixing with other chemicals or treatments.
- Control	Control cross contamination and sources of microbial spoilage, take care not to allow contaminated water or substances to enter the container.
- Maintain	Maintain in original, sealed container out of reach of children.
- Other	Wash hands and contaminated skin and clothing thoroughly clean under running water after use. Pat skin dry. If irritation occurs discontinue future contact.

8.0 Exposure Controls / Personal Protection

National exposure standards	None allocated.				
Biological monitoring	If symptoms of rash or breathing difficulties occur after exposure, discontinue use and seek medical advice, show this SDS.				
Control banding	Band Zero – Household or Consumer Use	Band 1 – good industrial hygiene practice	Band 2 – use local exhaust ventilation	Band 3 – enclose the process	Other
Engineering controls	Ensure supply of running water and adequate ventilation.				
PPE	Protective eyewear and gloves are recommended, additional controls or PPE may be merited by individual circumstances.				

9.0 Physical & Chemical Properties

Appearance	Colourless to pale yellow transparent surfactant fluid.	**Partition co-efficient: n-octonol/water**	Not established.
Odour	Distinctive and characteristic.	**Solubility**	Water miscible.
pH	4.8 – 6.6 (10% solution)	**Vapour pressure**	Not established.
Melting / freezing point	~0ºC.	**Vapour density**	Not established.
Boiling point	~100ºC.	**Relative density**	1.030 – 1.070g/mL.
Flash point	Not established.	**Auto-ignition temperature**	Not established.
Evaporation rate	Not established.	**Decomposition temperature**	Not established.
Flammability	Not flammable.	**Viscosity**	500 – 1,500cPs.
Explosive limits	Not established.	**Other**	Not established.

10.0 Stability & Reactivity

Reactivity	Miconazole nitrate may react with latex.
Chemical stability	Formulated to be stable as supplied.
Possibility of hazardous reactions	No data.
Conditions to avoid	Avoid freezing, avoid strong light, do not store in damp areas or with strong chemicals.
Incompatible materials	Oxidising products, anionic surfactants.

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Hazardous decomposition products	With prolonged storage, generally beyond product expiry date, Chlorhexidine Gluconate will degrade into p-chloroaniline (PCA), a category 2 carcinogen, accelerated by low pH and high temperatures. The breakdown product is readily absorbed by the skin and rapidly absorbed in the GI tract. It is then widely distributed throughout the body including to the muscle, fat, skin, blood, liver, spleen and kidneys.

11.0 Toxicological Information

Ingredient name / type	Chlorhexidine Gluconate at 2%, Chlorhexidine, CHG, CAS 18472-51-0 **N.B.** The sodium salts of acetate, chloride and gluconate are considered to be of low concern and pose no unreasonable risk to human health (NICNAS). Therefore, the chlorhexidine moiety is expected to be responsible for the toxicity of the chemicals.
Acute toxicity	In a guideline-compliant study in Wistar rats, the LD_{50} values for Chlorhexidine Gluconate were 2,270mg/kg bw for males and 2,000mg/kg bw for females. Mortalities were noted six days after exposure. Psychomotor depression, ataxia, depressed respiratory tract, sporadic incidence of ptosis (drooping eyelid), chromodacryorrhoea (bloody tears), epistaxis (nasal bleeding) and diarrhoea were observed in treated rat.
Skin corrosion / irritation	In a chamber scarification test in humans (closed Duhring chamber), Chlorhexidine caused a slight irritation to the skin. Significant treatment-related effects were not reported in long-term studies on mouthwashes containing up to 0.2% Chlorhexidine Digluconate.
Serious eye damage / irritation	**Irreversible damage** to corneal tissue and corrosion of the conjunctivae and eyelids have been observed following exposure to the chemicals. The available data support recommendation for classification for all the chemicals in this group. Results from an OECD TG 405-compliant study demonstrated that a single application of Chlorhexidine (0.1g) to albino rabbits caused irreversible damage to the cornea and iris. After one hr of treatment, partial or total clouding of the cornea were observed, increasing with time. Other effects included conjuntival hyperaemia (increased blood flow) and hypersecretion. Irreversible damage to the rabbit eye was observed following a single application of a 20% aqueous solution of Chlorhexidine Digluconate. The corneas of cats and New Zealand White rabbits were exposed to Chlorhexidine Digluconate for 30 – 40min. Examination of the corneas by scanning electron microscopy (SEM) showed progressive corneal damage between 0.001 – 0.01% with minimal damage at concentrations up to 0.005%. IN HUMANS: Chlorhexidine as eye drops has been used to treat acanthamoeba keratitis. This regime has treatment-related progressive ulcerative keratitis and a number of cases of cataract and iris atrophy have been reported.
Respiratory or skin sensitisation	Chlorhexidine has been reported to induce bradycardia (slow heart beat) with associated cyanotic spells in a newborn female. This was caused by using Chlorhexidine spray on the mother's breast to prevent mastitis from the third feed, when the baby was 12 hr old. Episodes of bradycardia occurred less frequently after spraying stopped. **Chlorhexidine Gluconate has been suggested to induce acute respiratory distress syndrome (ARDS)**. Accidental ingestion of 200mL of Chlorhexidine Gluconate by an 80-year-old female was fatal. Clinical signs observed before death (within 12 hr of ingestion) included hypotension, rapid deterioration of consciousness, progressively deteriorating arterial oxygen and eventually death from ARDS. In another case report, a patient developed ARDS after an intravenous injection of 0.8mg of the chemical (no further details provided). Cyanosis and methaemoglobinaemia have also been observed in incubated premature infants exposed to small amounts of PCA resulting from the breakdown of Chlorhexidine Gluconate in incubators (NICNAS).
Germ cell mutagenicity	Based on the weight of evidence from the available data the chemicals are not considered to be genotoxic. PCA, the breakdown product of the chemicals, tested positive in several *in vitro* assays. At the 300mg/kg bw dose, the chemical caused a significant increase in micronucleus frequency in B6C3F1 mice. It has also been reported to be genotoxic in a sex-linked recessive lethal assay in *Drosophila melanogaster* (NICNAS).
Carcinogenicity	The breakdown product of the chemicals, PCA, is classified as hazardous (Category 2 carcinogenic substance) with the risk phrase 'May cause cancer' (T; R45) in HSIS (Safe Work Australia). The available studies, in which a number of chemically-induced tumours, primarily in the spleen, subcutaneous tissues, kidneys, adrenal gland, liver and blood were reported, support this classification (NICNAS).
Reproductive toxicity	Based on the weight of evidence of the available data, the chemicals are not considered to cause specific reproductive or developmental toxicity. Any developmental effects were only observed secondary to maternal toxicity.

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Specific Target Organ Toxicity (STOT) – single exposure	Several reports have indicated that exposure to the chemicals in this group causes neurotoxicity. The use of Chlorhexidine as a preoperative disinfectant has been linked to sensorial hearing or otoxicity in patients after myringoplasty operations to repair perforated eardrums (Bicknell, 1971). In animals, 0.05% of Chlorhexidine was also ototoxic in guinea pigs after the chemical was introduced into the cavity of the middle ear (CIR, 1993). Furthermore, ocular injection of Chlorhexidine (0.25 – 7.5µg) to albino rats produced dose-dependent degeneration of adrenergic nerves (Henschen & Olson, 1984).
Specific Target Organ Toxicity (STOT) – repeated exposure	Based on the available data, hepatic damage from repeated oral exposure to the chemicals cannot be ruled out. However, data not sufficient to warrant classification.
Aspiration hazard	No data.
Skin - acute	Based on the available data for Chlorhexidine Digluconate and Chlorhexidine Diacetate, the chemicals are considered to have low acute dermal toxicity. In a dermal acute toxicity study in rabbits (EPA guideline-compliant), exposure to 5,000mg/kg of Chlorhexidine Gluconate caused increased blood flow (hyperaemia) and skin irritation including eschar (scab) formation. Thickening of the skin was also reported. With the exception of one animal, these observations were reversed within a week. No mortality was observed.
Inhaled - acute	Limited data available. LC50 in rats for Chlorhexidine Diacetate was reported to be 300mg/m3.
Swallowed - acute	LD50 was estimated to be in the range of 5,000mg/kg bw. At the highest administered dose (5,110mg/kg bw), clinical signs such as tremors, convulsions, prone position, disturbed startle reflexes, diarrhoea and laboured breathing were observed (REACH).
Eye - acute	IN HUMANS: Chlorhexidine as eye drops has been used to treat acanthamoeba keratitis. Whilst it is considered safe and non-toxic, treatment-related progressive ulcerative keratitis and a number of cases of cataract and iris atrophy have been reported.
Early onset symptoms	Could cause harmful systemic effects following a single exposure through inhalation exposure. The chemicals have been reported as causative agents of contact dermatitis, hives (urticaria), shortness of breath (dyspnoea) and anaphylactic shock. The critical health effects for risk characterisation include local effects (serious eye damage, skin sensitisation, and respiratory sensitisation).
Delayed health effects from exposure	The breakdown product of the chemicals, PCA, is a probable human carcinogen following long-term repeated exposure. A genotoxic mode of action cannot be excluded (NICNAS). The chemical can also cause skin sensitisation.
Exposure level & health effects	Literature reports that typical reported concentrations in products are below 0.1% and that at these concentrations, minimal eye irritation effects are expected and the risk of sensitisation is considered to be low; the product as supplied contains 2%; however this is likely to be diluted on for application and in use.
Interactive effects	No data.
Other	With prolonged storage, the chemicals are known to degrade into p-chloroaniline (PCA) (CAS No. 106-47-8) (CIR, 1993). The decomposition process is accelerated by low pH and high temperatures. PCA, the breakdown product of the chemicals being assessed, is readily absorbed by the skin and rapidly absorbed in the gastrointestinal tract. It is widely distributed throughout the body including to the muscle, fat, skin, blood, liver, spleen and kidneys. It is also rapidly metabolised in the liver and eliminated through urinary, faecal and biliary excretion. The metabolic pathways for PCA are C-, N- hydroxylation, N-oxidation, and N-acetylation. PCA is also reported to bind to haemoglobin and to kidney and liver proteins (NICNAS).
Ingredient name / type	Micronazole Nitrate, CAS 22832-87-7 at 2%; Miconazole CAS 22916-47-8. **N.B. LIMITED DATA.**
Acute toxicity	LD_{50} Guinea Pig 276mg/kg (CCID); Mouse 519mg/kg (CIDplus); Rat 550mg/kg (CIDplus); IN HUMANS: 125 – 250mg as tablets or gel 4 times daily. For the treatment of oral and intestinal candidiasis. After oral administration, Miconozole is incompletely absorbed from the gastrointestinal tract; peak plasma concentrations of about 1µg/mL have been achieved 4 hr after a dose of 1g. There is little absorption through skin or mucous membranes when Miconazole Nitrate is applied topically (Reynolds, 1989). Following intravaginal administration of Miconazole Nitrate, small amounts are absorbed (Briggs et al., 1986). Administration of a single dose of Miconazole Nitrate suppositories (100mg) to healthy subjects resulted in a total recovery from the urine and faeces of 0.85% (+0.43%) of the administered dose.
Skin corrosion / irritation	VERY LIMITED DATA. IN HUMANS: Has been used without observable/reported short term adverse effects as follows: skin applied once or twice a day as a 2% cream, lotion or powder; vaginal, 5 – 10g of a 2% cream once daily for 7 – 14 days or tampons containing 100mg twice a day for 5 days.
Serious eye damage / irritation	VERY LIMITED DATA. Solutions of Miconazole have been used for topical application into the eye without observable/reported short term adverse effects.

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Respiratory or skin sensitisation	RESIRATORY: NO DATA **Sensitivity (allergic) reactions:** Vulvovaginal burning, itching or irritation pelvic cramps, rash, cutaneous pruritus, flushes by local application.
Germ cell mutagenicity	No data.
Carcinogenicity	Chronic/carcinogenicity studies in test animals have **not been performed**.
Reproductive toxicity	In animals Miconazole has not shown teratogenic effects but is embryotoxic following high oral doses (80mg/kg) (CCID). Animal studies indicate that the drug crossed the placenta (Physician's Desk Reference) but it is unknown whether Miconazole Nitrate is excreted in breast milk. In the rat studies dystocia was reported at and above 80mg/kg. These various effects were not seen in rats tested with intravaginal products (Physician's Desk Reference).
Specific Target Organ Toxicity (STOT) – single exposure	No data.
Specific Target Organ Toxicity (STOT) – repeated exposure	No data.
Aspiration hazard	No data.
Skin - acute	Local reactions consist of irritation and sensitivity reactions; contact dermatitis has been reported. Pruritus & skin rashes may occur after oral, intravenous or intravaginal administration.
Inhaled - acute	No data.
Swallowed - acute	No data.
Eye - acute	Local effects: local irritation and sensitivity reactions might occur when Miconazole is topically applied into the eye.
Early onset symptoms	Tachycardia and arrhythmias after intravenous doses. Haematological aggregation of erythrocytes, anaemia and thrombocytosis. Gastrointestinal anorexia, nausea, vomiting and diarrhoea. Local reactions: Irritation. Other: Hyperlipidaemia, drowsiness, febrile reactions, hyponatraemia, cute psychosis, arthralgia, anaphylaxis and irritation of the meninges (by intrathecal injection).
Delayed health effects from exposure	No data.
Exposure level & health effects	No data.
Interactive effects	Miconazole given systemically may enhance the activity of anticoagulant or suphonylurea hypoglycaemic drugs. The combination of Amphotericin and Miconazole appeared to be less effective when either drug was used alone. Miconazole enhanced the activity of clomipramine, carbamazepine and phenytoin. **May interact with some latex products**. Since concomitant administration of Rifampin and Ketoconazole (an imidazole), reduces the blood levels of the latter, the concurrent administration of Miconazole intravenously and Rifampicin should be avoided. Ketoconazole increases the blood level of Cyclosporin A, therefore, there is the possibility of a drug interaction involving Cyclosporin A and intravenous Miconazole; blood levels of Cyclosporin A should be monitored if the two drugs are given concomitantly.
Other	No data.
Ingredient name / type	Ethoxylated alcohol CAS 68439-50-9 **N.B** Malaseb contains several surfactants; the data included herein is considered to be representative of ~8% of the surfactant content before dilution during use. Please contact Dermcare if additional details are required.
Acute toxicity	LD_{50} (Rat, male): 1,376.3mg/kg, LD_{50} (Rat, female): 1,788.9mg/kg.
Skin corrosion / irritation	Extremely corrosive and destructive to tissue. Humans exposed to group members (CAS No. 68439-50-9 and 68131-39-5) and analogue chemicals (C12-18, AE3-20) have shown mild skin irritation in occlusive patch tests conducted with 0.1 – 100% concentrations (HERA, 2009). RIPT results in mild erythema, dryness and itching were observed in some subjects in the tests.
Serious eye damage / irritation	May cause irreversible eye damage. Vascularisation of the cornea was observed when undiluted analogue chemicals. Concentrations between 1 – 10% were slight to moderately irritating.
Respiratory or skin sensitisation	Does not cause skin sensitisation.
Germ cell mutagenicity	Multiple negative genotoxicity tests.
Carcinogenicity	Limited data (Negative).
Reproductive toxicity	No reproductive toxicity identified.
Specific Target Organ Toxicity (STOT) – single exposure	No data.
Specific Target Organ Toxicity (STOT) – repeated exposure	No data.

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Aspiration hazard	No data (Could reasonably be expected to have surfactant effect on lung tissue and associated mucosa).
Skin - acute	Extremely corrosive and destructive to tissue.
Inhaled - acute	LC_{50}(Rat): >1,600mg/m^3 Exposure time: 4 h.
Swallowed - acute	Harmful if swallowed - Cat. 4 (H302).
Eye - acute	May cause irreversible eye damage.
Early onset symptoms	The main critical effects to human health are acute oral toxicity and skin and eye irritation. The irritant effects are similar to those produced by other surfactants, and the severity of irritation appears to increase directly with concentration and generally decreases with an increasing number of ethoxylate groups.
Delayed health effects from exposure	The chemicals of this group are not expected to cause serious damage to health from repeated dermal exposure. In a 90-day study (OECD TG 411), rats were exposed to an alcohol ethoxylate (unspecified) at 1, 10 or 25% concentration. There were no significant treatment related effects at any concentration. Increased relative kidney weights and dry and flaky skin were observed at 10 and 25% dose groups. No histological lesions were observed. The NOAEL was established as 80mg/kg bw/day (HERA, 2009).
Exposure level & health effects	NOAEL (No observed adverse effect level): 519mg/kg/d (Rat: male & female).
Interactive effects	No data.
Other	The chemicals of this group are surfactants which may have low molecular weight (<1,000 Da) and are likely to be formulated in many cases with a high proportion of low molecular weight species <500 Da; hence absorption across biological membranes is expected. Studies of alcohol ethoxylates (C12 or C13, AE6) demonstrated that they are readily absorbed across the gastrointestinal tract after ingestion and are rapidly excreted in the urine, faeces and in expired air. An increase in the number of ethylene glycol units increases the proportion excreted via the faeces and expired air (HERA, 2009). The chemicals of this group are synthesised through processes which may result in 1,4-dioxane as an impurity. This impurity (listed under dioxane) is controlled through listing in the SUSMP in Schedule 6, with schedule labelling requirements applying above 100ppm.

12.0 Ecological Information

Ecotoxicity	Toxic to aquatic life.
Persistence & biodegradability	Some surfactants are biodegradable, however actives are not.
Bioaccumulative potential	No data.
Mobility in soil	No data.
Other adverse effects	No data.

13.0 Disposal Considerations

Disposal containers & methods	Wrap bottle in paper and dispose of as permitted by local jurisdiction.
Physical/chemical properties that may affect disposal options	Avoid excessive use; do not let large volumes run to waterways.
Effects of sewage disposal	No data.
Special precautions for incineration or land fill	No data.

14.0 Transport Information

UN number	**Proper shipping name / technical name**	**Transport hazard class**	**Packing group**
None allocated.	None allocated.	None allocated.	None allocated.
Environmental hazards for transport purposes		**Special precautions for user**	
None allocated.		None allocated.	

15.0 Regulatory Information

Montreal Protocol	**Stockholm Convention**	**Rotterdam Convention**	**Basel Convention**	**MARPOL**
Not applicable.	Not included.	Not included.	Not included.	Not included.

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Prohibitions / licensing restrictions	Ecotoxic
ACVM	A7641
NICNAS	Several ingredients have been classified and reviewed at IMAP T2, relevant findings are included herein.

16.0 Other Information

16.1 Consumer & General Usage Information

Directions for use	Use as directed on the label. Apply to wet animal at several points and massage into coat. Leave solution on the animal for 10 minutes then rinse off thoroughly with clean water. Do not leave animal unsupervised during 10 minute contact time.
Directions for removal	Rinse thoroughly clean under running water.
Nano materials	None identified.
Animal derived ingredients	None identified.

16.2 SDS Preparation

Date prepared	20 December 2016.
Changes made	GHS, full review.
Reference standards	Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice February 2016. ISBN 978-0-642-33311-7. GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Fourth revised edition.
Resources relied upon include	Hazardous Substances Data Bank (HSDB) https://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB Suppliers' SDS; RTECS Toxicity Database; IRAC; CDC NIOSH, HSIS, Safe Work Australia GHS Hazardous Chemical Information List.
Disclaimer: This SDS provides safety data only for the product and circumstances of use nominated. The SDS summarises our best knowledge of the specific, well known and equivocally demonstrated health and safety hazard information pertaining to workplace use of the nominated substance(s) however the author expressly disclaims that the SDS is complete, is a representation or is a guarantee. Published and other resources have been relied upon, and in some cases conflicting information has been identified. Each user should read the SDS and consider the information in the context of their specific conditions and circumstances, and in conjunction with other products.	
® MALASEB is a registered trade mark of Dermcare-Vet Pty Ltd.	

16.3 Key Abbreviations or Acronyms Used

%	percent (parts per hundred)
***C or ºC**	degrees Celsius
<	less than
>	greater than
ACCC	Australian Competition and Consumer Commission
ADG	Australian Dangerous Goods
AICS	Australian Inventory of Chemical Substances
APVMA	Australian Pesticides and Veterinary Medicines Authority
AS	Australian Standard
ASCC	Australian Society of Cosmetic Chemists
BOD	Biochemical Oxygen Demand
bw	Body weight
CAS	Chemical Abstracts Service (Registry Number)
cc	cubic centimetres (equivalent to mL)
COD	Chemical Oxygen Demand
COSING	The European Commission database with information on Cosmetic Ingredients & Substances Dangerous Goods
EINECS	European Inventory of Existing Commercial Chemical Substances (Identifying Number)
EU	Europe / European
FSANZ	Food Standards Australia New Zealand
g	gram
GHS	Globally Harmonised System (safety symbols and labelling)
GMO	Genetically Modified Organism
h or hr	hour
HAZCHEM	Emergency action code of numbers and letters that provide information to emergency services especially fire fighters
HSIS	The Safe Work Australia Hazardous Substances Information System
IATA	The International Air Transport Association

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ICAO	The International Civil Aviation Organization
IFA	The International Fragrance Association
INCI	The International Nomenclature of Cosmetic Ingredients
kg	kilogram
L	litre
LC_{50}	LC_{50} is the average concentration of a material (by a defined route) that causes the death of 50% (one half) of a group of (defined) test animals. Normally quoted in mg/kg body weight.
LD_{50}	LD_{50} is the average dose of a material, given all at once, which causes the death of 50% of a group of (defined) test animals. Normally quoted in mg/kg body weight. Products with a LD_{50} of less than 5,000mg/kg are scheduled poisons in Australia (see SUSMP).
LD_{LO}	Lethal Dose Low is the minimum amount of a material shown to be lethal to a specified type of animal. Typically quoted in mg/kg body weight.
m or min	Minute
m^3	cubic metre
Max or max	maximum
mg	milligram
Min or min	minimum
mL	millilitre
mm	millimetre
mm Hg	millimetre of Mercury
MOS	Margin of Safety
MRL	Maximum Residue Limit
MSDS	Material Safety Data Sheet (see also SDS)
Nano	Nano(sized) material / Nano Technology; …industrial materials (including a cosmetic ingredient) comprising 10% or more by composition that has been intentionally produced, manufactured or engineered to have either an internal or external property that is a size range typically between 1nm and 100nm.
ng	Nanogram
NICNAS	The National Industrial Chemicals Notification and Assessment Scheme (AUSTRALIA)
NIOSH	The National Institute for Occupational Safety and Health (USA)
NOAEL	No Observed Adverse Effects Limit
NOHSC	National Occupational Health and Safety Commission (AUSTRALIA)
NOS	Not Otherwise Specified
NZS	New Zealand Standard
OECD	Organization for Economic Co-operation and Development (Test Method number)
OSHA	The Occupational Safety and Health Administration (USA)
PEL	Permissible Exposure Limit
pH	(pH) A measure of acidic (less than 7) or alkalinity (above 7); extreme values represent extreme acidic or alkaline conditions. Typically products with a pH less than three or greater than 11 are scheduled poisons (SUSMP).
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (EUROPE)
RTECS	The Registry of Toxic Effects of Chemical Substances
SCCP	Scientific Committee on Cosmetic Products and Non-Food Products (EUROPE)
SDS	Safety Data Sheet, (previously called MSDS) now SDS under GHS
STEL	Short Term Exposure Limit
SUSMP	Standard for the Uniform Scheduling of Medicine & Poisons (AUSTRALIA) also Poisons Standard
TGA	Therapeutic Goods Administration (AUSTRALIA)
TLV	Threshold Limit Value
TWA	Time Weighted Average
ug	microgram
uL	microlitre
UN	United Nations (number)
US or USA	The United States of America

End of SDS