

Maxi Vehicle Wash

Chemwatch Material Safety Data Sheet
Issue Date: 14-Jul-2013
A317LP

Hazard Alert Code: **LOW**

CHEMWATCH 21-9638
Version No:3.1.1.1
Page 1 of 17

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

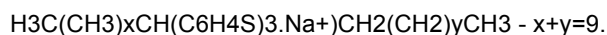
PRODUCT NAME

Maxi Vehicle Wash

PRODUCT USE

Linear alkylbenzene sulfonates (LAS) are, by volume, the most important group of synthetic anionic surfactant today. LAS are mainly used in laundry detergents and cleaning agents. LAS are frequently used as the sodium salts as the sole surfactant in a formulation or in conjunction with other anionic, nonionic or cationic surfactants. LAS consist of an alkyl chain attached to a benzene ring in the para position to the sulfonate group. Sometimes toluene, xylene and naphthalene are used in place of benzene. The homologue distribution in commercial products covers alkyl chain lengths from C10 to C13 with an average chain length of C11.6. LAS raw materials are derived from linear alkyl benzenes in which the ring is attached to a C-atom which is itself attached to two other C-atoms. The benzene ring may be attached to any of the C atoms from C2 to C6 but not to C1. Structures in which the benzene ring may be attached to different C atoms are described as isomers. E.g., the structure with a C12 alkyl chain and the benzene ring attached at the second alkyl carbon is designated as the C12-2-isomer and abbreviated C12-2.

LAS can be represented structurally as:



Used according to manufacturer's directions.

Heavy duty vehicle washing concentrate

SUPPLIER

Company: GSB Chemical Co. Pty Ltd

Address:

84 Camp Road

Broadmeadows

VIC, 3047

Australia

Telephone: +61 3 9457 1125

Fax: +61 3 9459 7978

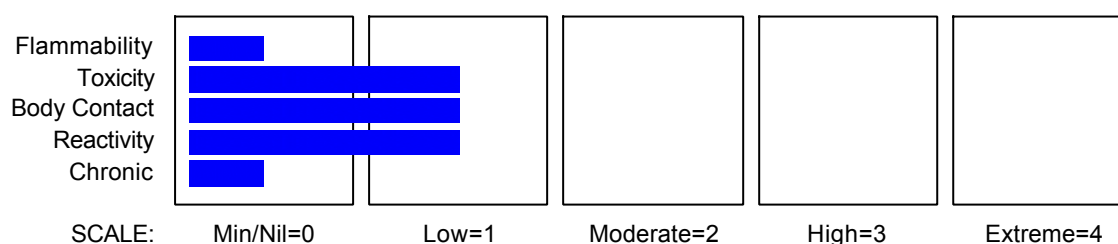
Email: info@gsbchem.com.au

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

CHEMWATCH HAZARD RATINGS



continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 2 of 17

Section 2 - HAZARDS IDENTIFICATION

RISK

- Toxic to aquatic organisms.
- May cause long- term adverse effects in the environment.
- Ingestion may produce health damage*.
- Cumulative effects may result following exposure*.
- May produce discomfort of the eyes, respiratory tract and skin*.
- Limited evidence of a carcinogenic effect*.
- Possible respiratory and skin sensitiser*.
- Repeated exposure potentially causes skin dryness and cracking*.

* (limited evidence).

SAFETY

- Do not breathe gas/fumes/vapour/spray.
- Avoid contact with skin.
- Avoid contact with eyes.
- Wear suitable gloves.
- Wear eye/face protection.
- In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
- In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
diethanolamine dodecylbenzenesulfonate	26545-53-9	<10
coconut diethanolamide	68603-42-9	<10
sodium (C10- 16)alkyl ether sulfate	68585-34-2	<10
sodium tripolyphosphate	7758-29-4	<10
dye		1-10
water	7732-18-5	>60

Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

- If this product comes in contact with the eyes:
 - Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - Seek medical attention without delay; if pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 3 of 17

Section 4 - FIRST AID MEASURES

SKIN

- If skin contact occurs:
 - Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances.

In such an event consider:

- foam.
- dry chemical powder.
- carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- The emulsion is not combustible under normal conditions. However, it will break down under fire conditions and the hydrocarbon component will burn.
- Decomposes on heating and produces toxic fumes of: carbon dioxide (CO₂), nitrogen oxides (NO_x), phosphorus oxides (PO_x), sulfur oxides (SO_x), metal oxides, other pyrolysis products typical of burning organic material. May emit poisonous fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM

None

continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 4 of 17

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

Environmental hazard - contain spillage.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

MAJOR SPILLS

Environmental hazard - contain spillage.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue (see Section 13 for specific agent).
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

■ Alkanolamines and iron may produce unstable complexes. Monoethanolamine (MEA) and iron form a trisethanolamino-iron complex. This material may spontaneously decompose at temperatures between 130 and 160 degrees C. and is suspected of causing a fire in a nearly empty storage tank containing a "heel" of MEA in contact with carbon steel coils. If steam coil heating is used, low pressure steam in stainless steel coils should be considered. Drum heating should also be reviewed and, where possible, temperatures should be maintained below 130 degrees C.

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.

continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 5 of 17

Section 7 - HANDLING AND STORAGE

- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
 - Packing as recommended by manufacturer.
 - Check all containers are clearly labelled and free from leaks.
- Do not use aluminium, zinc or galvanized iron container.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: *May be stored together*

O: *May be stored together with specific preventions*

X: *Must not be stored together*

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- diethanolamine dodecylbenzenesulfonate: CAS:26545- 53- 9
- coconut diethanolamide: CAS:68603- 42- 9 CAS:61791- 31- 9 CAS:71786- 60- 2
- sodium (C10- 16)alkyl ether sulfates: CAS:68585- 34- 2 CAS:125736- 54- 1
- sodium tripolyphosphate: CAS:7758- 29- 4 CAS:15091- 98- 2
- water: CAS:7732- 18- 5

MATERIAL DATA

DIETHANOLAMINE DODECYLBENZENESULFONATE:

MAXI VEHICLE WASH:

SODIUM (C10-16)ALKYL ETHER SULFATE:

continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 6 of 17

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

SODIUM TRIPOLYPHOSPHATE:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

DIETHANOLAMINE DODECYLBENZENESULFONATE:

SODIUM TRIPOLYPHOSPHATE:

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

COCONUT DIETHANOLAMIDE:

for diethanolamine:

Odour Threshold: 2.6 ppm

The TLV-TWA is thought to be protective against the significant risk of eye damage and skin irritation.

Odour Safety Factor (OSF)

OSF=1.7 (DIETHANOLAMINE).

WATER:

No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION



continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 7 of 17

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
 - Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
- The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and

has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

Application of a non-perfumed moisturiser is recommended.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

RESPIRATOR

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

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 8 of 17

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. 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.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Blue viscous liquid with a characteristic odour; miscible with water.

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	100	Solubility in water (g/L)	Miscible
Flash Point (°C)	Not Applicable	pH (1% solution)	11.2
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Available
Autoignition Temp (°C)	Not Applicable	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	1.1
Lower Explosive Limit (%)	Not Applicable	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	>90	Evaporation Rate	Not Available

continued...

Maxi Vehicle Wash

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

Hazard Alert Code: LOW

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 9 of 17

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.

Inorganic polyphosphates are used extensively in domestic and industrial products. Experiments on rats showed kidney damage, growth retardation, and tetany due to low calcium.

Ingestion of anionic surfactants may produce diarrhoea, bloated stomach, and occasional vomiting.

EYE

- There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

Non-ionic surfactants can cause numbing of the cornea, which masks discomfort normally caused by other agents and leads to corneal injury. Irritation varies depending on the duration of contact, the nature and concentration of the surfactant.

Direct eye contact with some anionic surfactants in high concentration can cause severe damage to the cornea.

Low concentrations can cause discomfort, excess blood flow, and corneal clouding and swelling. Recovery may take several days.

SKIN

- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.

Anionic surfactants can cause skin redness and pain, as well as a rash. Cracking, scaling and blistering can occur.

Open cuts, abraded or irritated skin should not be exposed to this material.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS

- There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 10 of 17

Section 11 - TOXICOLOGICAL INFORMATION

persons compared to the general population.

There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

In long-term animal studies, inorganic polyphosphates produced growth inhibition, increased kidney weights, bone decalcification, enlargement of the parathyroid gland, inorganic phosphate in the urine, focal necrosis of the kidney and alterations of muscle fibre size. Inorganic phosphates have not been shown to cause cancer, genetic damage or reproductive or developmental damage in animal tests.

Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

Prolonged or chronic exposure to alkanolamines may result in liver, kidney or nervous system injury. Repeated inhalation may aggravate asthma and lung disease involving inflammation or scarring.

Results of animal testing with diethanolamine (DEA) and monoethanolamine (MEA) has shown a wide range of possible effects, including induction of tumours, developmental abnormalities and injury to the foetus and mother.

Many amines greatly sensitise the skin and respiratory system, and certain individuals, especially those predisposed to asthma and other allergic responses, may show allergic reactions when chronically exposed to alkanolamines.

Exposure to sulfonates can cause an imbalance in cellular salts and therefore cellular function. Airborne sulfonates may be responsible for respiratory allergies and, in some instances, minor dermal allergies.

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

SODIUM (C10-16)ALKYL ETHER SULFATE:

WATER:

DIETHANOLAMINE DODECYLBENZENESULFONATE:

■ No significant acute toxicological data identified in literature search.

COCONUT DIETHANOLAMIDE:

SODIUM TRIPOLYPHOSPHATE:

MAXI VEHICLE WASH:

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

COCONUT DIETHANOLAMIDE:

DIETHANOLAMINE DODECYLBENZENESULFONATE:

■ DEA has low acute toxicity if ingested orally or applied on the skin. It can cause moderate skin irritation and severe eye irritation. It may affect sperm production, cause anaemia and damage the liver and kidney. It has not been shown to cause cancer in humans; though there is evidence that it may cause cancer in mice, and damage to the foetus at levels toxic to the mother.

DIETHANOLAMINE DODECYLBENZENESULFONATE:

MAXI VEHICLE WASH:

■ Linear alkyl benzene sulfonates are derived from strong corrosive acids. Animal testing has shown they can

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 11 of 17

Section 11 - TOXICOLOGICAL INFORMATION

cause skin reactions, eye irritation, sluggishness, passage of frequent watery stools, weakness and may lead to death. They may also react with surfaces of the mouth and intestines, depending on the concentration exposed to. There is no evidence of harm to the unborn baby or tendency to cause cancer.

COCONUT DIETHANOLAMIDE:

TOXICITY

Oral (rat) LD50:2700 mg/kg

Inhalation (Rat) LC50:88 ppm/h *

■ The chemicals in the Fatty Nitrogen Derived (FND) Amides are generally similar in terms of physical and chemical properties, environmental fate and toxicity. Its low acute oral toxicity is well established across all subcategories by the available data and show no apparent organ specific toxicity, mutation, reproductive or developmental defects.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Laboratory testing shows that the fatty acid amide, cocoamide DEA, causes occupational allergic contact dermatitis, and that allergy to this substance is becoming more common.

Alkanolamides are manufactured by condensation of diethanolamine and the methyl ester of long chain fatty acids. The alkanolamides are susceptible to the formation of nitrosamines, by either existing contamination or the presence of nitrosating agents. According to the Cosmetic Directive (2000), cocoamide DEA must not be used in products with nitrosating agents, because of the risk of formation of N-nitrosamines. In cosmetics a maximum concentration of 5% fatty acid dialkanolamides is permissible. N-nitrosamines, in animal testing, have been shown to cause cancer. Animal testing has not shown that cocoamide DEA or other FAAs can cause mutations.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

*Ethoquad C/12 SDS

IRRITATION

Nil reported.

SODIUM (C10-16)ALKYL ETHER SULFATE:

TOXICITY

Oral (rat) LD50:1600 mg/kg

■ Alcohol ethoxysulfates (AES) are of low acute toxicity. Neat AES are irritant to the skin and eyes. The irritation potential of solutions containing AES depends on concentration. AES is not a contact sensitizer, and contact with the skin at levels seen in laundry or hand dishwashing preparations are not considered to be of concern. AES are not considered to cause mutations, genetic damage, or cancer, and are not reproductive or developmental toxins.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

for similar product (sodium lauryl ether sulfate)

IRRITATION

Skin (rabbit):25 mg/24 hr Moderate

SODIUM TRIPOLYPHOSPHATE:

TOXICITY

Oral (Rat) LD50:5190 mg/kg

Dermal (Rabbit) LD50:>3160 mg/kg *

IRRITATION

Nil Reported

CARCINOGEN

continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 12 of 17

Section 11 - TOXICOLOGICAL INFORMATION

coconut diethanolamide	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group 2B	Possibly carcinogenic to humans
SENSITISER			
coconut diethanolamide	Australia Final Report on Hazard Classification of Common Skin Sensitisers		Recommended for Hazard Classification (R43) No
SKIN			
sodium tripolyphosphate	GESAMP/EHS Composite List - GESAMP Hazard Profiles		D1: skin irritation/corrosion NI

Section 12 - ECOLOGICAL INFORMATION

COCONUT DIETHANOLAMIDE:

SODIUM (C10-16)ALKYL ETHER SULFATE:

SODIUM TRIPOLYPHOSPHATE:

DIETHANOLAMINE DODECYLBENZENESULFONATE:

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.

COCONUT DIETHANOLAMIDE:

SODIUM TRIPOLYPHOSPHATE:

DIETHANOLAMINE DODECYLBENZENESULFONATE:

DO NOT discharge into sewer or waterways.

SODIUM (C10-16)ALKYL ETHER SULFATE:

COCONUT DIETHANOLAMIDE:

Very toxic to aquatic organisms.

COCONUT DIETHANOLAMIDE:

DIETHANOLAMINE DODECYLBENZENESULFONATE:

For diethanolamine (DEA):log Kow: -1.43 Koc: 4Half-life (hr) air: 4Henry's atm m³ /mol: 5.35E-14BOD 5: 0.03-0.1,0.9%BOD 28: 57 mg/gmCOD : 1590 mg/gmTPC 470 mg/gm ThOD: 2.13 BCF: <1

DEA is not expected to pose a high risk to drinking water, and its potential for bioconcentration in aquatic organisms is low. DEA is categorized as "practically nontoxic" on an acute basis to freshwater invertebrates, estuarine/marine invertebrates, and freshwater plants.

Environmental Fate: In soil and water, DEA is expected to biodegrade fairly rapidly following acclimation (half-life on the order of days to weeks). In soil, DEA should leach. In the atmosphere, DEA is expected to exist almost entirely in the vapor phase. Reaction with photochemically generated hydroxyl radicals is expected to be the dominant removal mechanism (half-life, four hours), but may also be removed from the atmosphere in precipitation. DEA is essentially nonvolatile from water. The half-life for DEA vapour reacting with photochemically generated hydroxyl radicals in the atmosphere has been estimated to be four hours. DEA can form N-nitrosodiethanolamine (NDELA) when nitrites are present. In air, NDELA is expected to exist solely as a vapor where it is degraded by reaction with photochemically-produced hydroxyl radicals with an estimated half-life of 13 hours. NDELA is stable in light and degradation by photolysis is unlikely.

In soil it is expected to have very high mobility: it is expected to biodegrade slowly in soil. In summary,

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 13 of 17

Section 12 - ECOLOGICAL INFORMATION

it appears that DEA is relatively short lived and that it does not present a high risk to contaminate drinking waters. NDELA, a potential formation product, is persistent to biotic and abiotic processes, and mobile. The water quality criteria (WQC) for nitrosamines is 0.0008 ug/L (U.S. Clean Water Act). DEA's potential for bioconcentration in aquatic organisms is low. At very low concentrations (about 10 ppm) diethanolamine can be degraded in biological wastewater treatment plants.

Ecotoxicity: Fish LC50 (96 h): Fathead minnow 100 mg/l; (48 h): Bluegill sunfish 1850 mg/l; Daphnia magna LC50 (48 h): 109 mg/l. DEA is categorized as ranging from moderately toxic to practically nontoxic to freshwater invertebrates based on EC50 values ranging from 2.15 to 306 mg/L. DEA is categorized as "practically nontoxic" to estuarine/marine invertebrates. EC50 values for estuarine/marine invertebrates (shrimps and molluscs) exposed to DEA ranged from >100 to 2,800 mg/L. DEA is categorised as practically nontoxic to freshwater plants on an acute basis based on EC50 values ranging from 103 to 523 mg/L.

DIETHANOLAMINE DODECYLBENZENESULFONATE:

Toxic to aquatic organisms.

For Linear Alkylbenzene Sulfonic Acids and their Salts (LABS): Log Kow: ~2.

Environmental Fate: The environmental fate of LABS and alkylbenzene sulfonate, (LAS), are expected to be similar. LABS are liquids and LAS is a solid at room temperature. Most of these chemicals will partition to the soil and water – very little move to the air or sediment. Atmospheric Fate: Breakdown of LABS/LAS by light is expected to be an important fate process. The substances are expected to be broken down by hydroxyl radicals, with a half-life of 7-8.6 hours, (LABS), and 95% breakdown of LAS, in 20 minutes, at 25 C.

Terrestrial Fate: Substantial breakdown of LABS, LAS, and the C10-16 derivatives of LABS by oxygen using microbes is expected to occur. LAS will not breakdown under low oxygen conditions.

Aquatic Fate: LABS/LAS break down into the same ion, in water. LABS are highly water soluble and are expected to be broken down by light and microbes in water; however, LAS is not expected to be broken down in sunlight waters. LABS are strong acids that are completely broken down into their ions, (ionized), in water, are not expected to evaporate from water, and are expected to sorb to sediment. The toxicity of LABS bound to sediment is relatively low compared to those in solution.

Ecotoxicity: LABS tend to concentrate in the environment as alkyl chain length increases and have a low to moderate environmental accumulation potential. LAS are almost equally toxic to fish, including bluegill sunfish, and fathead minnow, and invertebrates, whereas toxicity to algae varies widely. LAS do not concentrate in aquatic organisms because they are rapidly metabolized. LABS are moderately toxic to fresh and saltwater fish. LABS have a wide range of toxicities to algae ranging from toxic to moderately toxic, and the substances may be toxic to the plankton species *Gymnodium breve*. LABS C10-C13 are moderately toxic to *Daphnia magna* water fleas and toxicity increases with increasing alkyl chain length. LABS may be toxic to the marine crustacean *Acartia tonsa*. The products of the biological breakdown of LABS have a lower toxicity to invertebrates and fish than the intact surfactant. The toxicity of LABS to fish generally increases with increasing alkyl chain length. The substances may effect growth in mussels.

COCONUT DIETHANOLAMIDE:

Marine Pollutant

Yes

Fatty acid amides (FAA) are nonionics used in hair shampoo, liquid soaps, shaving creams and other personal care products. FAA consists of a fatty acid, usually derived from coconut oil, which is linked to an amide group by a C-N bond. The amide may be typically either be monoethanolamide (MEA), diethanolamide (DEA), or monoisopropanolamide (MIPA). Tests show that most fatty acid amides (FAA), such as the widely used cocodiethanolamide (cocoamide DEA) and cocomonethanolamide (cocoamide MEA), are ultimately degraded under aerobic conditions, however test results for the aerobic biodegradability of the ethoxylated FAA are contradictory. Tests results for anaerobic biodegradability of cocoamide MEA showed 79% of the theoretical gas production during incubation of diluted digested sludge for 42 days at 35 degree C using the ECETOC screening test, and attained 81% during 56 days when tested with the ISO 11734 screening test. No experimental data describing the bioaccumulation potential of fatty acid amides were found in the literature. The aquatic toxicity of FAA has been determined for species representing the three trophic levels: algae, invertebrates, and fish. Cocoamide DEA appears to be more toxic to aquatic organisms than cocoamide MEA. An exceptionally high toxicity of cocoamide MEA was reported for two tests with the green alga *Scenedesmus subspicatus* as the 96 h-EC50 were 1.0 and 1.1 mg/l . More recent tests indicate that the toxicity of

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 14 of 17

Section 12 - ECOLOGICAL INFORMATION

cocoamide MEA to algae are not markedly higher than the toxicity to daphnids and fish, and EC50 values above 10 mg/l are probably more representative for the toxicity towards algae. The ethoxylated FAA show the same level of aquatic toxicity as the non-ethoxylated FAA. Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Miljoministeriet (Danish Environmental Protection Agency).

For Fatty Nitrogen-Derived Amides (FND Amides)

Environmental Fate: Models predict that these chemicals are non-volatile, however these predictions are of limited practical use. Measured values indicate that FND Amides are insoluble in water, however models predict that they are insoluble to moderately soluble but this is of little value in determining environmental fate and effects. Modelled predictions of photodegradation indicate that these chemicals would be expected to degrade relatively rapidly when exposed to sunlight (t1/2 values ranged from 2.2 to 9.5 hours). Due to the surfactant properties and solubility of the FND Amides, hydrolytic stability is of little value in determining environmental fate or effects. Biodegradability: Measured and modelled data indicate that these chemicals are readily or inherently biodegradable across Subcategories I, II, and IV. Minimal degradability of one chemical from Subcategory III indicates that these chemicals are slowly degraded. However, slower degradation of these chemicals is probably due to limited water solubility and behavior of the chemicals in aqueous solution. Longer single alkyl group substitutions and/or multiple long-chain substituents reduce "inherent" biodegradability.

Ecotoxicity: Data on acute toxicity to fish and daphnid show that FND Amides may adversely affect aquatic organisms. While models suggest that these chemicals are "not toxic at solubility", for surfactants such as the FND Amides acute aquatic toxicity is related to the effects of the surfactant properties on the organism as opposed to direct chemical toxicity.

For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.

Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.

Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids. Cationic surfactants are strongly sorbed by solids, particularly clays. Significant sorption of anionic and non-ionic surfactants has been observed in activated sludge and organic river sediments. Surfactants have been shown to improve water infiltration into soils with moderate to severe hydrophobic or water-repellent properties.

Ecotoxicity: Some surfactants are known to be toxic to animals, ecosystems and humans, and can increase the diffusion of other environmental contaminants. The acute aquatic toxicity generally is considered to be related to the effects of the surfactant properties on the organism and not to direct chemical toxicity.

Surfactants should be considered to be toxic to aquatic species under conditions that allow contact of the chemicals with the organisms. Surfactants are expected to transfer slowly from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolized rapidly during the process of bioaccumulation. Surfactants are not to be considered to show bioaccumulation potential if they are readily biodegradable.

SODIUM (C10-16)ALKYL ETHER SULFATE:

Marine Pollutant

Yes

For alkyl ether sulfates (alkyl or alcohol ethoxysulfates):

Environmental Fate: Extensive studies have been conducted with regards to the environmental fate and environmental effects of alcohol ethoxysulfates (AES). The results of exposure and effects data show that the use of AES in household detergents and cleaning products poses very little risk to the environment. The most common cause of biodegradation of AES is due to cleavage of an ether bond. The cleavage may take place at any ether bond producing a fatty alcohol or an alcohol ethoxylate and ethylene glycol sulfates of various lengths. Aerobic biodegradation is not affected by the length of the chain, but may be hindered by branching of the alkyl chain. AES are readily and completely degraded under aerobic conditions, and are not considered to bioconcentrate in aquatic organisms.

Ecotoxicity: The chemical structure of AES highly influences the effect on aquatic organisms. The relations between alkyl chain length, number of EO groups and toxicity are complex and not yet resolved, but in general, changes in EO numbers affects toxicity more than changes in the alkyl chain length. In AES with alkyl chains of less than C16, the toxicity tended to decrease with increasing numbers of EO, but this was reversed for

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 15 of 17

Section 12 - ECOLOGICAL INFORMATION

alkyl chain lengths above C16. The toxicity of AES thus seems to peak at alkyl chain lengths of C16. In a study of the acute toxicity of various AES (C8 to C19.6 and 1-3 EO) to bluegill sunfish (*Lepomis macrochirus*), the LC50 fell from > 250 mg/l for C8 and 375 mg/l for C10 to 24 mg/l for C13, 4-7 mg/l for C14, 2 mg/l for C15 and 0.3 mg/l for C16, and then increased to 10.8 mg/l for C17.9 and 17 mg/l for C19.6. Reported ranges for EC50 for the acute toxicity of AES to daphnids between 1 and 50 mg/l. However, an EC50 of 0.37 mg/l was observed in a 21-day reproduction test with *Daphnia magna*. The LC50 values for fish are in the range between 0.39 to 450 mg/l. A LOEC value of 0.22 mg/l has been reported for a chronic life cycle test with a duration of 1 year. The toxicity of AES towards fish seems to increase with increasing alkyl chain length for AES with up to 16 carbons. Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Torben Madsen et al: Miljoministeriet (Danish Environmental Protection Agency).

SODIUM TRIPOLYPHOSPHATE:

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and/or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and/or delayed, to the structure and/or functioning of natural ecosystems.

May cause long-term adverse effects in the aquatic environment.

For Phosphate: The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae.

Aquatic Fate: Lakes overloaded with phosphates is the primary catalyst for the rapid growth of algae in surface waters. Planktonic algae cause turbidity and flotation films. Shore algae cause ugly muddying, films and damage to reeds. Decay of these algae causes oxygen depletion in the deep water and shallow water near the shore. The process is self-perpetuating because an anoxic condition at the sediment/water interface causes the release of more adsorbed phosphates from the sediment. The growth of algae produces undesirable effects on the treatment of water for drinking purposes, on fisheries, and on the use of lakes for recreational purposes.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
diethanolamine	No Data	No Data	No Data	No Data
dodecylbenzenesulfonate	Available	Available	Available	Available
coconut diethanolamide	No Data	No Data	No Data	No Data
	Available	Available	Available	Available
sodium (C10- 16)alkyl ether	No Data	No Data	No Data	No Data
sulfate	Available	Available	Available	Available
sodium tripolyphosphate	No Data	No Data	No Data	No Data
	Available	Available	Available	Available

Section 13 - DISPOSAL CONSIDERATIONS

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration,

continued...

Maxi Vehicle Wash

Hazard Alert Code: LOW

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 16 of 17

Section 13 - DISPOSAL CONSIDERATIONS

distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:

None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

Regulations for ingredients

diethanolamine dodecylbenzenesulfonate (CAS: 26545-53-9) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)"

coconut diethanolamide (CAS: 68603-42-9, 61791-31-9, 71786-60-2) is found on the following regulatory lists;

"Australia Final Report on Hazard Classification of Common Skin Sensitisers", "Australia Inventory of Chemical Substances (AICS)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD List of High Production Volume (HPV) Chemicals", "OSPAR National List of Candidates for Substitution – Norway", "OSPAR National List of Candidates for Substitution – United Kingdom"

continued...

Maxi Vehicle Wash

Hazard Alert Code: **LOW**

Chemwatch Material Safety Data Sheet

Issue Date: 14-Jul-2013

A317LP

CHEMWATCH 21-9638

Version No:3.1.1.1

Page 17 of 17

Section 15 - REGULATORY INFORMATION

sodium (C10-16)alkyl ether sulfate (CAS: 68585-34-2, 125736-54-1) is found on the following regulatory lists;

"Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD List of High Production Volume (HPV) Chemicals"

sodium tripolyphosphate (CAS: 7758-29-4, 15091-98-2) is found on the following regulatory lists;

"Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "FisherTransport Information", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "International Numbering System for Food Additives", "OECD List of High Production Volume (HPV) Chemicals", "Sigma-AldrichTransport Information"

water (CAS: 7732-18-5) is found on the following regulatory lists;

"Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD List of High Production Volume (HPV) Chemicals", "OSPAR National List of Candidates for Substitution – Norway", "Sigma-AldrichTransport Information"

No data for Maxi Vehicle Wash (CW: 21-9638)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
coconut diethanolamide	68603-42-9, 61791-31-9, 71786-60-2
sodium (C10-16)alkyl ether sulfate	68585-34-2, 125736-54-1
sodium tripolyphosphate	7758-29-4, 15091-98-2

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)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.

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This is the end of the MSDS.