

MAXI DEGREASER

Hazard Alert Code:
MODERATE

Chemwatch Material Safety Data Sheet

Revision No: 2.0

Chemwatch 21-9779

Issue Date: 11-Dec-2009

CD 2009/3

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Maxi Degreaser

PRODUCT USE

- Used according to manufacturer's directions. Heavy duty all purpose cleaner, for degreasing surfaces prior to painting.

SUPPLIER

Company: GSB Chemical Co. Pty Ltd

Address:

84 Camp Road

Broadmeadows

VIC, 3047

AUS

Telephone: +61 3 9457 1125

Fax: +61 3 9459 7978

Email: info@gsbchem.com.au

HAZARD RATINGS

	Min	Max
Flammability:	0	■
Toxicity:	2	■
Body Contact:	2	■
Reactivity:	0	■
Chronic:	2	■

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

POISONS SCHEDULE

None

RISK

- Irritating to respiratory system and skin.
- Irritating to skin.
- Ingestion may produce health damage*.
- Cumulative effects may result following exposure*.
- May produce discomfort of the eyes*.
- Limited evidence of a carcinogenic effect*.
- Possible skin sensitiser*.

* (limited evidence).

SAFETY

- Do not breathe gas/ fumes/ vapour/ spray.
- Avoid contact with skin.
- Wear eye/ face protection.
- To clean the floor and all objects contaminated by this material use water.
- In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium carbonate	497-19-8	1-10
trisodium polyphosphate		1-10
lauric diethanolamide	120-40-1	1-10
dye		1-10
water	7732-18-5	>60

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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.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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 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 for fire only.
- 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), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

May emit corrosive fumes.

FIRE INCOMPATIBILITY

- None known.

HAZCHEM

None

Section 6 - ACCIDENTAL RELEASE MEASURES

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EMERGENCY PROCEDURES

MINOR SPILLS

-
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact 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

- 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.
- 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.
- 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 storing and handling recommendations.
- 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.

STORAGE INCOMPATIBILITY

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

Avoid reaction with
metals.

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.

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- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

+

X

+

X

X

+

*X: Must not be stored together**O: May be stored together with specific preventions**+: May be stored together*

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- sodium carbonate: CAS:497-19-8
- lauric diethanolamide: CAS:120-40-1
- water: CAS:7732-18-5

MATERIAL DATA

MAXI DEGREASER:

■ 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.

SODIUM CARBONATE:

■ 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.

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- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

OEL STEL: (Russia) 5 mg/m³**LAURIC DIETHANOLAMIDE:**

■ for diethanolamine:

Odour Threshold: 2.6 ppm

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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).

No exposure limits set by NOHSC or ACGIH.

WATER:

- No exposure limits set by NOHSC or ACGIH.

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 lens 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]

HANDS/FEET

- - Wear chemical protective gloves, eg. PVC.
 - Wear safety footwear or safety gumboots, eg. 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.

Suitability and durability of glove type is dependent on usage. Factors such as:

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

are important in the selection of gloves.

OTHER

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

RESPIRATOR

- Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	AK-AUS P	-
1000	50	-	AK-AUS P
5000	50	Airline *	-
5000	100	-	AK-2 P
10000	100	-	AK-3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

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

- 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. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Yellow liquid with a characteristic odour; miscible with water.

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

Molecular Weight: Not Available	Boiling Range (°C): 100	Melting Range (°C): Not Available
Specific Gravity (water=1): 1.1	Solubility in water (g/L): Miscible	pH (as supplied): Not Available
pH (1% solution): 11.2	Vapour Pressure (kPa): 4.4 @20C	Volatile Component (%vol): >90
Evaporation Rate: Not Available	Relative Vapour Density (air=1): Not Available	Flash Point (°C): Not Applicable
Lower Explosive Limit (%): Not Applicable	Upper Explosive Limit (%): Not Applicable	Autoignition Temp (°C): Not Applicable
Decomposition Temp (°C): Not Available	State: Liquid	Viscosity: Not Available

Material	Value
log Kow	-1.43

Section 10 - CHEMICAL STABILITY

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.

EYE

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

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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.

SKIN

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

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

Chronic severe inhalation exposure to sodium carbonate may result in perforation of the nasal septum and serious pulmonary oedema (lung damage).

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.

TOXICITY AND IRRITATION

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

■ 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.

SODIUM CARBONATE:

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

TOXICITY

Oral (rat) LD50: 4090 mg/kg

Inhalation (rat) LC50: 2300 mg/m³/2h

IRRITATION

Skin (rabbit): 500 mg/24h Mild

Eye (rabbit): 100 mg/24h Moderate

Eye (rabbit): 100 mg/30s Mild

Eye (rabbit): 50 mg SEVERE

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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.

LAURIC DIETHANOLAMIDE:

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

Oral (rat) LD50: 2700 mg/kg

Nil reported.

■ Fatty acid amides (FAA) are ubiquitous in household and commercial environments. The most common of these are based on coconut oil fatty acids alkanolamides. These are the most widely studied in terms of human exposure.

Fatty acid diethanolamides (C8-C18) are classified by Comité Européen des Agents de Surface et de leurs Intermediaires Organiques (CESIO) as Irritating (Xi) with the risk phrases R38 (Irritating to skin) and R41 (Risk of serious damage to eyes). Fatty acid monoethanolamides are classified as Irritant (Xi) with the risk phrases R41

Several studies of the sensitization potential of cocoamide diethanolamide (DEA) indicate that this FAA induces occupational

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allergic contact dermatitis and a number of reports on skin allergy patch testing of cocoamide DEA have been published. These tests indicate that allergy to cocoamide DEA is becoming more common.

Alkanolamides are manufactured by condensation of diethanolamine and the methylester of long chain fatty acids. Several alkanolamides (especially secondary alkanolamides) are susceptible to nitrosamine formation which constitutes a potential health problem. Nitrosamine contamination is possible either from pre-existing contamination of the diethanolamine used to manufacture cocoamide DEA, or from nitrosamine formation by nitrosating agents in formulations containing cocoamide DEA. 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. The maximum content allowed in cosmetics is 5% fatty acid dialkanolamides, and the maximum content of N-nitrosodialkanolamines is 50 mg/kg. The preservative 2-bromo-2-nitropropane-1,3-diol is a known nitrosating agent for secondary and tertiary amines or amides. Model assays have indicated that 2-bromo-2-nitropropane-1,3-diol may lead to the N-nitrosation of diethanolamine forming the carcinogenic compound, N-nitrosodiethanolamine which is a potent liver carcinogen in rats (IARC 1978).

Several FAAs have been tested in short-term genotoxicity assays. No indication of any potential to cause genetic damage was seen

Lauramide DEA was tested in mutagenicity assays and did not show mutagenic activity in Salmonella typhimurium strains or in hamster embryo cells. Cocoamide DEA was not mutagenic in strains of Salmonella typhimurium when tested with or without metabolic activation

Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Miljøministeriet (Danish Environmental Protection Agency).

WATER:

- No significant acute toxicological data identified in literature search.

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

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LAURIC DIETHANOLAMIDE:

- Octanol/water partition coefficients cannot easily be determined for surfactants because one part of the molecule is hydrophilic and the other part is hydrophobic. Consequently they tend to accumulate at the interface and are not extracted into one or other of the liquid phases. As a result surfactants are expected to transfer slowly, for example, from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolised rapidly during the process of bioaccumulation. This was emphasised by the OECD Expert Group stating that chemicals are not to be considered to show bioaccumulation potential if they are readily biodegradable.

Several anionic and nonionic surfactants have been investigated to evaluate their potential to bioconcentrate in fish. BCF values (BCF - bioconcentration factor) ranging from 1 to 350 were found. These are absolute maximum values, resulting from the radiolabelling technique used. In all these studies, substantial oxidative metabolism was found resulting in the highest radioactivity in the gall bladder. This indicates liver transformation of the parent compound and biliary excretion of the metabolised compounds, so that "real" bioconcentration is overstated. After correction it can be expected that "real" parent BCF values are one order of magnitude less than those indicated above, i.e. "real" BCF is <100. Therefore the usual data used for classification by EU directives to determine whether a substance is "Dangerous to the Environment" has little bearing on whether the use of the surfactant is environmentally acceptable.

MAXI DEGREASER:

LAURIC DIETHANOLAMIDE:

SODIUM CARBONATE:

- DO NOT discharge into sewer or waterways.

MAXI DEGREASER:

SODIUM CARBONATE:

LAURIC DIETHANOLAMIDE:

- Harmful to aquatic organisms.

- for diethanolamine (DEA):

log Kow : -1.43

Koc : 4

Half-life (hr) air : 4

Henry's atm m³/mol: 5.35E-14

BOD 5: 0.03-0.1, 0.9%

BOD 28: 57 mg/gm

COD : 1590 mg/gm

TPC 470 mg/gm

ThOD : 2.13

BCF : <1

Based on its physicochemical properties and biodegradation characteristics, 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). This compound may also be removed from the atmosphere in precipitation. The Henry's Law constant for DEA is 3.87x10⁻¹¹atm.m³/mol which suggests that 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 based on an estimated reaction rate constant of 8.9x10⁻¹¹ cm³/molecules/sec at 25°C and an average ambient hydroxyl concentration of 5x10⁺⁵ molecules/cm³.

DEA, in the presence of nitrites, can form N-nitrosodiethanolamine (NDELA). In air, NDELA is expected to exist solely as a vapor based on a vapor pressure of 2.78 x 10⁻⁴ mmHg at 25 C. Vapor-phase NDELA will be degraded in the atmosphere by reaction

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with photochemically-produced hydroxyl radicals with an estimated half-life of 13 hours. NDELA is stable to direct photolysis. In soil, an estimated Koc of 4.8 suggests that this compound is expected to have very high mobility; it is expected to biodegrade slowly in soil. In summary, 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 amounts formed are uncertain (it is only indicated that the half-life is in the order of days to weeks). 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 mollusks) 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.

■ Fatty acid amides (FAA) are nonionics used in hair shampoo, liquid soaps, shaving creams and other personal care products. FAA consist 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).

Most fatty acid amides (FAA), such as the widely used cocodiethanolamide (cocoamide DEA) and cocomonethanolamide (cocoamide MEA), are ultimately degraded in the OECD tests for ready biodegradability under aerobic conditions. The available data describing the aerobic biodegradability of the ethoxylated FAA are contradictory. Certain data indicates that these surfactants do not pass the criteria for ready biodegradability, whereas the opposite is the case for data obtained from Akzo Nobel

The anaerobic biodegradability of FAA has been examined for cocoamide MEA by using the ECETOC screening test. Ultimate anaerobic biodegradability of cocoamide MEA reached 79% of the theoretical gas production, ThGP, during incubation of diluted digested sludge for 42 days at 35 degree C . By use of the ISO 11734 screening test, which corresponds to the ECETOC method, the ultimate anaerobic biodegradability of cocoamide MEA attained 81% during 56 days

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 organism 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 with a pure cocoamide ME - purity about 95.5% C12-18 gave EC50 values of 16.6 mg/l for *Scenedesmus subspicatus* and 17.8 mg/l for *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum*) . The latter data indicate that the toxicity of 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).

WATER:

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Maxi Degreaser sodium carbonate	LOW	No data	LOW	HIGH
lauric diethanolamide	LOW	No data	LOW	HIGH
water	LOW	No data	LOW	HIGH

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, 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 licenced land-fill or incineration in a licenced apparatus (after admixture with suitable combustible material).

MAXI DEGREASER

Hazard Alert Code:
MODERATE

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- 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, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

Regulations for ingredients

sodium carbonate (CAS: 497-19-8) is found on the following regulatory lists;

"Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals"

lauric diethanolamide (CAS: 120-40-1) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals"

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

"Australia Inventory of Chemical Substances (AICS)", "GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Maxi Degreaser (CW: 21-9779)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes lauric diethanolamide 120- 40- 1 R43

■ 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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