

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

n-Octylglucoside

SYNONYMS

C14-H28-O6, 1-O-octyl-beta-D-glucopyranoside, 1-O-octyl-beta-D-glucopyranoside, n-octylglucoside, n-octylglucoside, "nonionic surfactant"

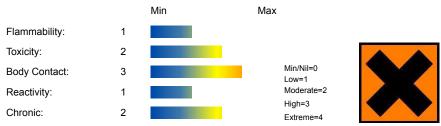
PRODUCT USE

Nonionic surfactant suited for solubilisation and isolation of membrane proteins. No absorbance at 228 um. Dialysable.

SUPPLIER

Company: Santa Cruz Biotechnology, Inc. Address: 2145 Delaware Ave Santa Cruz, CA 95060 Telephone: 800.457.3801 or 831.457.3800 Emergency Tel: Luis Yanez at 831.251.2170

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

POISONS SCHEDULE

None

| RISK | SAFETY |
|---|---|
| Irritating to eyes respiratory system and skin. | Do not breathe dust. |
| Harmful to aquatic organisms. | Avoid contact with skin. |
| Ingestion may produce health damage*. | ■ Wear eye/ face protection. |
| Cumulative effects may result following exposure*. | To clean the floor and all objects contaminated by this material use water. |
| Eye contact may produce serious damage*. | In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre. |
| Repeated exposure potentially causes skin dryness and cracking*. | If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label). |

* (limited evidence).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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29836-26-8

Hazard Alert Code Key: octyl-beta-D-glucopyranoside

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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 ٠ aspiration.
- Observe the patient carefully.
- Never give liguid 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:
- Immediately hold eyelids apart and flush the eye continuously with running water.

EXTREME

- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- 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.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Water spray or fog.
- ٠ Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- 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 courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.



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| Hazard Alert Code Key: | EXTREME | HIGH | MODERATE | LOW |
|--|--|---|---|---|
| If safe to do so, remove conta Equipment should be thoroug FIRE/EXPLOSION HAZAR | hly decontaminated after us | e. | | |
| Combustible solid which burr Avoid generating dust, particularly source of ignition, i.e. fl particular hazard; accumulati to 1400 microns diameter will A dust explosion may release capable of damaging plant ar Usually the initial or primary damage or rupture the plant | larly clouds of dust in a cor ame or spark, will cause fi ons of fine dust (420 micron contribute to the propagatic e of large quantities of gase d buildings and injuring peo explosion takes place in a lf the shock wave from th | ifined or unventilated spare re or explosion. Dust clu or less) may burn rapidly on of an explosion. ous products; this in turn ple. confined space such a e primary explosion enter | buds generated by the fine y and fiercely if ignited.; onc n creates a subsequent pres s plant or machinery, and o prs the surrounding area, it | e grinding of the solid are a e initiated larger particles up ssure rise of explosive force can be of sufficient force to will disturb any settled dust |
| layers, forming a second dus chain reactions of this type. Dry dust can be charged elec Build-up of electrostatic charge Powder handling equipment | trostatically by turbulence, p ge may be prevented by bor | oneumatic transport, pour ding and grounding. | ing, in exhaust ducts and du | uring transport. |
| venting. • All movable parts coming in c Combustion products include: ca May emit poisonous fumes. May emit corrosive fumes. | | | | urning organic material. |
| FIRE INCOMPATIBILITY Avoid contamination with oxid | lising agents i.e. nitrates, ox | idising acids, chlorine ble | eaches, pool chlorine etc. as | ignition may result |
| HAZCHEM None | | | | |
| PERSONAL PROTECTION | N | | | |

Glasses:

Chemical goggles.

Section 6 - ACCIDENTAL RELEASE MEASURES

Respirator:

Particulate

EMERGENCY PROCEDURES

MINOR SPILLS

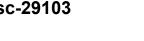
- •
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

MAJOR SPILLS

Moderate hazard.

- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise Emergency Services.

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Hazard Alert Code Key: EXTREME HIGH MODERATE LOW

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.

Material Safety Data Sheet

- 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.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

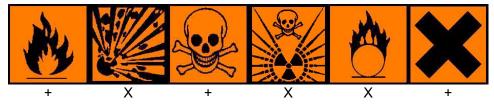
STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents •

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 storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



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 • octyl-beta-D-glucopyranoside: CAS:29836-26-8

MATERIAL DATA

OCTYL-BETA-D-GLUCOPYRANOSIDE:

■ 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.

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.

PERSONAL PROTECTION



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SANTA CRUZ

Hazard Alert Code Key: EXTREME HIGH MODERATE LOW

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

- 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.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocaoutchouc
- polyvinyl chloride
- Gloves should be examined for wear and/ or degradation constantly.

OTHER

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

RESPIRATOR

| _ | | |
|---|--|--|
| | | |

| Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|-------------------|----------------------|----------------------|------------------------|
| 10 x ES | P1 Air-line* | | PAPR-P1 - |
| 50 x ES | Air-line** | P2 | PAPR-P2 |
| 100 x ES | - | P3 | - |
| | | Air-line* | - |
| 100+ x ES | - | Air-line** | PAPR-P3 |

* - Negative pressure demand ** - Continuous flow.

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

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| | | | The Power is Quastion |
|--|------------------|-------------------------------|-------------------------------|
| Hazard Alert Code Key: EXTREME H | IGH | MODERATE | LOW |
| | | | |
| Local exhaust ventilation is required where solids are handled a | as powders or | crystals; even when particu | lates are relatively large, a |
| certain proportion will be powdered by mutual friction. | | | |
| Exhaust ventilation should be designed to prevent accumulation and | | • • | |
| If in spite of local exhaust an adverse concentration of the substan protection might consist of: | ice in air could | occur, respiratory protection | should be considered. Such |
| (a): particle dust respirators, if necessary, combined with an absorptio | 0, | | |
| (b): filter respirators with absorption cartridge or canister of the right ty (c): fresh-air hoods or masks | vpe; | | |
| Build-up of electrostatic charge on the dust particle, may be preven | nted by bonding | and grounding. | |
| Powder handling equipment such as dust collectors, dryers and venting. | , , | | neasures such as explosion |
| Air contaminants generated in the workplace possess varying "esca | pe" velocities w | hich, in turn, determine the | "capture velocities" of fresh |
| circulating air required to efficiently remove the contaminant. | | | · |
| Type of Contaminant: | Air Speed: | | |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of | 1-2.5 m/s (200 | 0-500 f/min.) | |
| rapid air motion) | | | |
| 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 (50 | 00-2000 f/min.) | |
| Within each range the appropriate value depends on: | | | |
| Lower end of the range | Upper end of | the range | |
| 1: Room air currents minimal or favourable to capture | •• | oom air currents | |
| 2: Contaminants of low toxicity or of nuisance value only | v | nts of high toxicity | |
| 3: Intermittent, low production. | | ction, heavy use | |
| 4: Large hood or large air mass in motion | 01 | -local control only | |
| Simple theory shows that air velocity falls rapidly with distance as | | , | tion pipe. Velocity generally |
| decreases with the square of distance from the extraction point (in s adjusted, accordingly, after reference to distance from the contaminat | imple cases). T | herefore the air speed at th | e extraction point should be |

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 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres 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

White powder; mixes with water.

Material Safety Data Sheet

PHYSICAL PROPERTIES

| Solid. Mixes with water. | | | |
|-----------------------------|----------------|---------------------------------|----------------|
| State | Divided solid | Molecular Weight | 292.38 |
| Melting Range (°C) | 50-52 | Viscosity | Not Applicable |
| Boiling Range (°C) | Not available | Solubility in water (g/L) | Miscible |
| Flash Point (°C) | Not available | pH (1% solution) | Not available |
| Decomposition Temp (°C) | Not available. | pH (as supplied) | Not applicable |
| Autoignition Temp (°C) | Not available | Vapour Pressure (kPa) | Negligible |
| Upper Explosive Limit (%) | Not available. | Specific Gravity (water=1) | Not available |
| Lower Explosive Limit (%) | Not available | Relative Vapour Density (air=1) | Not Applicable |
| Volatile Component (%vol) | Negligible | Evaporation Rate | Not applicable |

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| Hazard Alert Code Key: | EXTREME | HIGH | MODERATE | LOW |
|------------------------|---------|------|----------|-----|
| - | | | | |

CONDITIONS CONTRIBUTING TO INSTABILITY

- ● F
 - Presence of incompatible materials.
- Product is considered stable.

Material Safety Data Sheet

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.

Nonionic surfactants may produce localised irritation of the oral or gastrointestinal lining and induce vomiting and mild diarrhoea.

EYE

■ If applied to the eyes, this material causes severe eye damage.

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.

Alkyl polyglycosides are irritating to the eyes at very high concentrations, Some C8 alkyl glycoside solutions may produce serious eye damage.

SKIN

This material can cause inflammation of the skin oncontact in some persons.

The material may accentuate any pre-existing dermatitis condition.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

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

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

Alkyl glycosides, as a family, are considered non-irritating to the skin.

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

The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result

in excessive exposures.

CHRONIC HEALTH EFFECTS

• Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray. Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

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 (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

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| Hazard Alert Code Key: | EXTREME | HIGH | MODERATE | LOW | |
|--|--------------------------------|-----------------------|----------|-----|--|
| Alkyl glycosides are considered non-irritating to skin, but irritating to eyes at very high concentrations. A general classification of a 65% C8 alkyl glycoside solution according to | | | | | |
| the Substance Directive 67/548/EEC is Irritating (Xi) with the risk phrase R41 (Risk of | | | | | |
| serious damage to the eyes) | or R36 (Irritating to the eyes | s) (Akzo Nobel 1998). | | | |

No significant acute toxicological data identified in literature search.

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

OCTYL-BETA-D-GLUCOPYRANOSIDE:

Harmful to aquatic organisms.

• 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.

■ Alkyl polyglycosides (APG) and fatty acid glucose amides (FAGA) are nonionic surfactants used in household products such as cleaning agents, liquid dishwashing agents and liquid detergents. APG is composed of a linear fatty alcohol bound to the C-1 carbon of the glucose molecule (glycoside bond). Commercial APG mixtures usually have a degree of polymerisation of approximately 1.4 moles of glucose per molecule of fatty alcohol.

The general structure (where R=glucose) is : R1.4-O-(CH2)nH

FAGA have the following structure: RCH2-CO-N(CH3)CH2(CHOH)4CH2OH

Several studies have shown that APG with a linear alkyl chain are ultimately biodegradable in the absence of molecular oxygen. The anaerobic biodegradation of these surfactants is normally rapid and may exceed 60% of Theoretical Gas Production (ThGP) within 28 days. Under strictly anoxic conditions, a branched C8 APG was only partially degraded in contrast to the extensive anaerobic degradation of linear APG.

The effects of APG structure on the aerobic degradation pathway have not been described.

Similarly, the pathways by which FAGA biodegrades are not yet known.

According to the results obtained for ready aerobic biodegradability, APG with alkyl chain lengths from C8 to C16 are readily biodegradable . Ultimate aerobic biodegradability of C12-14 APG was also tested and showed 96-100% removal of Dissolved Organic Carbon (DOC). The primary biodegradation of APG was also rapid and ultimate biodegradation without formation of stable metabolites was confirmed. Complete mineralization without an accumulation of any metabolites has also been demonstrated.

The aquatic toxicity of alkyl glycosides and glucose amides is characterized by EC/LC50 values in the range from 2.5 to more than 100 mg/l with the lowest toxicity for the short-chained APG. With EC/LC50 values of 2.5-12 mg/l, C12-14 APG are considered toxic to aquatic organisms, whereas C8-10 APG have a lower toxicity with EC/LC50 =/>20 mg/l. The EC/LC50 values for algae, crustaceans and fish were between 11 and 38 mg/l for C12 EGE and between 2.9 and 57 mg/l for FAGA with C12 to C14 alkyl chains Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Miljoministeriet (Danish Environmental Protection Agency).

■ DO NOT discharge into sewer or waterways.

Ecotoxicity

| Ingredient | Persistence: Water/Soil | Persistence: Air | Bioaccumulation | Mobility |
|------------------------------|-------------------------|------------------|-----------------|----------|
| octyl-beta-D-glucopyranoside | LOW | | 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

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| Hazard Alert Code Key: | EXTREME | HIGH | MODERATE | LOW |
|------------------------|---------|------|----------|-----|
| | | | | |

• 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. 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)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:

None (ADG6) NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

octyl-beta-D-glucopyranoside (CAS: 29836-26-8) is found on the following regulatory lists; "Australia Inventory of Chemical Substances (AICS)"

Section 16 - OTHER INFORMATION

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