

# Corn oil

sc-214761



*The Power of Quality*

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Corn oil

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060

800.457.3801 or 831.457.3800

### EMERGENCY:

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNOMYNS

"maise oil", "mazola oil", "maize oil", "vegetable oil", maydol

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	0	
Body Contact:	2	
Reactivity:	2	
Chronic:	2	

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

### CANADIAN WHMIS SYMBOLS



### EMERGENCY OVERVIEW

#### RISK

#### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

#### SWALLOWED

- The material has NOT been classified as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.  
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■ Bulk laxatives can cause temporary bloating and blockage of the esophagus and/or intestine. As they shorten the time of digestion, the absorption of other drugs will be affected.

#### EYE

■ Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

#### SKIN

■ Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.

■ There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

■ 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

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

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

■ Fine mists generated from plant/ vegetable (or more rarely from animal) oils may be hazardous. Extreme heating for prolonged periods, at high temperatures, may generate breakdown products which include acrolein and acrolein-like substances.

#### CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Synthetic 1,2-diglycerides of short chain (C6, C8, C10) fatty acids are activators of protein kinase C (PKC). PKC is a serine-threonine kinase which also requires calcium ion for its activation. Activated PKC phosphorylates proteins of the cellular signal cascade, which eventually induce expression of growth regulatory genes. This, in turn, may promote the growth of tumours. Structural analogues of the 1,2-diglycerides, such as the phorbol esters, have been shown to strongly promote such an event.

Glyceryl dilaurate, glyceryl diarachidate, glyceryl dibehenate, glyceryl dierucate, glyceryl dihydroxystearate, glyceryl diisostearate, glyceryl dilinoleate, glyceryl dimyristate, glyceryl dioleate, glyceryl diricinoleate, glyceryl dipalmitate, glyceryl dipalmitoleate, glyceryl distearate, glyceryl palmitate lactate, glyceryl stearate citrate, glyceryl stearate lactate, and glyceryl stearate succinate are diacylglycerols (also known as diglycerides or glyceryl diesters) that function as skin conditioning agents-emollients in cosmetics. Only glyceryl dilaurate (up to 5%), glyceryl diisostearate (up to 43%), glyceryl dioleate (up to 2%), glyceryl distearate (up to 7%), and glyceryl stearate lactate (up to 5%) are reported to be in current use. Production proceeds from fully refined vegetable oils, which are further processed using hydrogenation and fractionation techniques, and the end products are produced by reacting selected mixtures of the partly hydrogenated, partly fractionated oils and fats with vegetable-derived glycerine to yield partial glycerides. In the final stage of the production process, the products are purified by deodorization, which effectively removes pesticide residues and lower boiling residues such as residues of halogenated solvents and aromatic solvents. Diglycerides have been approved by the Food and Drug Administration (FDA) for use as indirect food additives. Nominally, these ingredients are 1,3-diglycerides, but are easily isomerised to the 1,2-diglycerides form. The 1,3-diglyceride isomer is not a significant toxicant in acute, short-term, subchronic, or chronic animal tests. Glycerol dilaurate was a mild primary irritant in albino rabbits, but not a skin sensitiser in guinea pig maximization tests. Diacylglycerol oil was not genotoxic in the Ames test, in mammalian Chinese hamster lung cells, or in a rodent bone marrow micronucleus assay. An eye shadow containing 1.5% glyceryl dilaurate did not induce skin irritation in a single insult patch test, but mild skin irritation reactions to a foundation containing the same concentration were observed. A trade mixture containing an unspecified concentration of glyceryl dibehenate did not induce irritation or significant cutaneous intolerance in a 48-h occlusive patch test. In maximization tests, neither an eye shadow nor a foundation containing 1.5% glyceryl dilaurate was a skin sensitiser. Sensitisation was not induced in subjects patch tested with 50% w/w glyceryl dioleate in a repeated insult, occlusive patch test. Glycerol palmitate lactate (50% w/v) did not induce skin irritation or sensitization in subjects patch tested in a repeat-insult patch test. Phototoxicity or photoallergenicity was not induced in healthy volunteers tested with a lipstick containing 1.0% Glycerol rosinate. Two diacylglycerols, 1-oleoyl-2-acetyl-sn-glycerol and 1,2-dipalmitoyl-sn-glycerol, did not alter cell proliferation (as determined by DNA synthesis) in normal human dermal fibroblasts in vitro at doses up to 10 µg/ml. In the absence of initiation, Glycerol distearate induced a moderate hyperplastic response in randomly bred mice of a tumor-resistant strain, and with 9,10-dimethyl-1,2-benzanthracene (DMBA) initiation, an increase in the total cell count was observed. In a glyceryl monoester study, a single application of DMBA to the skin followed by 5% glyceryl stearate twice weekly produced no tumors, but slight epidermal hyperplasia at the site of application. Glycerol dioleate induced transformation in 3-methylcholanthrene-initiated BALB/3T3 A31-1-1 cloned cells in vitro. A tumour-promoting dosing regimen that consisted of multiple applications of 10 µmol of a 1,2-diacylglycerol (sn-1,2-didecanoylglycerol) to female mice twice daily for 1 week caused more than a 60% decrease in protein kinase C (PKC) activity and marked epidermal hyperplasia. Applications of 10 µmol sn-1,2-didecanoylglycerol twice weekly for 1 week caused a decrease in cytosolic PKC activity, an increase in particulate PKC activity, and no epidermal hyperplasia. In studies of the tumour-promoting activity of 1,2-diacylglycerols, dose and the exposure regimen by which the dose is delivered play a role in tumor promotion. The 1,2-diacylglycerol-induced activation of PKC may also relate to the saturation of the fatty acid in the 1 or 2 position; 1,2-Diacylglycerols with two saturated fatty acids are less effective. Also, the activity of 1,2-diacylglycerols may be reduced when the fatty acid moiety in the structure is a long-chain fatty acid. A histological evaluation was performed on human skin from female volunteers (18 to 56 years old) who had applied a prototype lotion or placebo formulation, both containing 0.5% Glycerol Dilaurate, consecutively for 16 weeks or 21 weeks. Skin irritation was not observed in any of the subjects tested. Biopsies (2 mm) taken from both legs of five subjects indicated no recognizable abnormalities of the skin; the epidermis was normal in thickness, and there was no evidence of scaling, inflammation, or neoplasms in any of the tissues that were evaluated. The available safety test data indicate that diglycerides in the 1,3-diester form do not present any significant acute toxicity risk, nor are these ingredients irritating, sensitizing, or photosensitising. Whereas no data are available regarding reproductive or developmental toxicity, there is no reason to suspect any such toxicity because the dermal absorption of these chemicals is negligible. 1,3-Diglycerides contain 1,2-diglycerides, raising the concern that 1,2-diglycerides could potentially induce hyperplasia. Data regarding the induction of PKC and the tumour promotion potential of 1,2-diacylglycerols increases the level of concern. Most of the diglycerides considered above, however, have fatty acid chains longer than 14 carbons and none have mixed saturated/unsaturated fatty acid moieties. In a 21-week use study of a prototype lotion containing 0.5% glyceryl dilaurate (a 14-carbon chain fatty acid) indicated no evidence of scaling, inflammation, or neoplasms in biopsy specimens. Also, DNA synthesis assays on glyceryl dilaurate and glyceryl distearate indicated that neither chemical altered cell proliferation (as determined by DNA synthesis) in normal human dermal fibroblasts in vitro at doses up to 10 µg/ml. However the concentration of these ingredients can vary (up to 43% for glyceryl diisostearate in lipstick), the frequency of application can be several times daily, and the proportion of diglycerides that are inactive 1,3 isomers versus potentially biologically active 1,2 isomers is unknown; as a precaution it is believed that each use should be examined to ensure the absence of epidermal hyperplasia during product development and testing. In the absence of inhalation toxicity data on the glyceryl diesters it is thought that these ingredients can be used safely in aerosolised products because they are not respirable. Although there are gaps in knowledge about product use, the overall information available on the types of products in which these ingredients are used and at what concentration indicate a pattern of use. Within this overall pattern of use, the CIR Expert Panel considers all ingredients in this group to be safe.

International Journal of Toxicology, Vol. 26, No. 3 Suppl, 1-30 (2007).

Glyceryl triesters (triglycerides), following ingestion, are metabolised to monoglycerides, free fatty acids and glycerol, all of which are absorbed in the intestinal mucosa and undergo further metabolism. Little or no acute, subchronic or chronic oral toxicity was seen in animal studies unless levels approached a significant percentage of caloric intake. Subcutaneous injections of tricaprylin in rats over a five-week period caused granulomatous reaction characterised by oil deposits surrounded by macrophages. Diets containing substantial levels of tributyrin produced gastric lesions in rats fed for 3-35 weeks; the irritative effect of the substance was thought to be the cause of tissue damage.

Dermal application was not associated with significant irritation in rabbit skin; ocular exposures were, at most, mildly irritating to rabbit eyes. No evidence of sensitisation or photosensitisation was seen in a guinea pig maximisation test. Most of the genotoxicity test systems were negative. Tricaprylin, trioctanoin and triolein have been used, historically, as vehicles in carcinogenicity testing of other chemicals. In one study, subcutaneous injection of tricaprylin, in newborn mice, produced more tumours in lymphoid tissue than were seen in untreated animals whereas, in another study, subcutaneous or intraperitoneal injection in 4- to 6-week old female mice produced no tumours. Trioctanoin injected subcutaneously in hamster produced no tumours; when injected intraperitoneally in pregnant rats there was an increase in mammary tumours among the off-spring but similar studies in pregnant hamsters and rabbits showed no tumours in the off-spring.

The National Toxicological Program conducted a 2-year study in rats given tricaprylin by gavage. The treatment was associated with a statistically significant dose-related increase in pancreatic acinar cell hyperplasia and adenoma but there were no acinar carcinomas.

Tricaprylin is not teratogenic to mice or rats but some reproductive effects were seen in rabbits. A low level of foetal eye abnormalities and a small percentage of abnormal sperm were reported in mice injected with trioctanoin.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
corn oil	8001-30-7	100
as glycerides of:		
myristic acid (0.1-1.7%),		
palmitic acid (8-12%)		
stearic acid (2.5-4.5%)		
hexadecanoic acid (0.2-1.6%)		
oleic acid (19-49%)		
linoleic acid (34-62%)		
unsaponifiable fraction (1-3%) as:		
gamma-tocopherol (0.1%)		
isomeric sitosterols as		
<a href="#">beta-sitosterol</a>	83-46-5	
<a href="#">alpha-1-sitosterol</a>	474-40-8	
<a href="#">gamma-sitosterol</a>	83-47-6	
waxes such as		
<a href="#">1-triacontanol</a>	593-50-0	
(myricyl alcohol)		
<a href="#">1-hexacosanol</a>	506-52-5	
(ceryl alcohol)		
phospholipids (2%) as		
<a href="#">lecithin</a>	8002-43-5	
inositol esters		
<a href="#">10,13-oxy-9,12-dihydroxyoctadecanoic acid</a>	Not avail.	
<a href="#">9,12-oxy-10,13-dihydroxyoctadecanoic acid</a>	Not avail.	
<a href="#">9,10-dihydroxy-12-octadecenoic acid</a>	53734-70-6	
<a href="#">12,13-dihydroxy-9-octadecenoic acid</a>	5939-06-0	

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

#### EYE

■ If this product comes in contact with eyes: · Wash out immediately with water. · If irritation continues, seek medical attention.

#### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

#### 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

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	0.914-0.921
Lower Explosive Limit (%):	Not available.

#### EXTINGUISHING MEDIA

· Foam.  
· Dry chemical powder.

#### FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.

· Wear full body protective clothing with breathing apparatus.

#### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible.  
· Slight fire hazard when exposed to heat or flame.  
Combustion products include: carbon dioxide (CO<sub>2</sub>), acrolein, other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.

May emit corrosive fumes.

CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

#### FIRE INCOMPATIBILITY

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

#### PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

1.NATURAL RUBBER 2.NITRILE

Respirator:

Type A-P Filter of sufficient capacity

## Section 6 - ACCIDENTAL RELEASE MEASURES

#### MINOR SPILLS

- Slippery when spilt.
- Remove all ignition sources.
- Clean up all spills immediately.

#### MAJOR SPILLS

- Slippery when spilt.

CARE: Absorbent material wet with occluded oil must be wet with water as they may auto-oxidize, become self heating and ignite.

Some oils slowly oxidize when spread in a film and oil on cloths, mops, absorbents may auto-oxidize and generate heat, smoulder, ignite and burn. In the workplace oily rags should be collected and immersed in water.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

#### PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.

Rags wet / soaked with unsaturated hydrocarbons / drying oils may auto-oxidise; generate heat and, in-time, smoulder and ignite. This is especially the case where oil-soaked materials are folded, bunched, compressed, or piled together - this allows the heat to accumulate or even accelerate the reaction

Oily cleaning rags should be collected regularly and immersed in water, or spread to dry in safe-place away from direct sunlight or stored, immersed, in solvents in suitably closed containers.

- Avoid all personal contact, including inhalation.

- Wear protective clothing when risk of exposure occurs.

#### RECOMMENDED STORAGE METHODS

- Glass container.
- Metal can or drum
- Packing as recommended by manufacturer.

#### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- 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.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
US - California Permissible Exposure Limits for Chemical Contaminants	beta-sitosterol (Particulates not otherwise regulated Respirable fraction)		5						(n)
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	beta-sitosterol (Particulates not otherwise regulated Respirable fraction)		5						
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	beta-sitosterol (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)		5						
US - Michigan Exposure Limits for Air Contaminants	beta-sitosterol (Particulates not otherwise regulated, Respirable dust)		5						

Canada - Prince Edward Island Occupational Exposure Limits	beta-sitosterol (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10	See Appendix B current TLV/BEI Book
US - Oregon Permissible Exposure Limits (Z-3)	alpha-1-sitosterol (Inert or Nuisance Dust: Total dust)	10	(d)
US OSHA Permissible Exposure Levels (PELs) - Table Z3	alpha-1-sitosterol (Inert or Nuisance Dust: (d) Respirable fraction)	5	
US OSHA Permissible Exposure Levels (PELs) - Table Z3	alpha-1-sitosterol (Inert or Nuisance Dust: (d) Total dust)	15	
US - Hawaii Air Contaminant Limits	alpha-1-sitosterol (Particulates not other wise regulated - Total dust)	10	
US - Hawaii Air Contaminant Limits	alpha-1-sitosterol (Particulates not other wise regulated - Respirable fraction)	5	
US - Oregon Permissible Exposure Limits (Z-3)	alpha-1-sitosterol (Inert or Nuisance Dust: Respirable fraction)	5	(d)

#### ENDOELTABLE

The following materials had no OELs on our records

- corn oil: CAS:8001-30-7
- lecithin: CAS:8002-43-5 CAS:112099-03-3 CAS:117742-89-9 CAS:160936-32-3 CAS:8035-17-4 CAS:8052-43-5 CAS:8057-53-2  
CAS:55128-59-1 CAS:252035-82-8 CAS:8030-76-0 CAS:8038-96-8 CAS:93685-90-6
- 9,10-dihydroxy-12-octadecenoic acid: CAS:53734-70-6 CAS:263399-34-4
- 12,13-dihydroxy-9-octadecenoic acid: CAS:5939-06-0

#### PERSONAL PROTECTION



#### RESPIRATOR

Type A-P Filter of sufficient capacity  
Consult your EHS staff for recommendations

#### EYE

- Safety glasses with side shields.
- Chemical goggles.

#### HANDS/FEET

- Wear chemical protective gloves, eg. PVC.

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

- 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).

- 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) 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) 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.

#### ENGINEERING CONTROLS

- General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear an approved respirator.

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Care: Atmospheres in bulk storages and even apparently empty tanks may be hazardous by oxygen depletion. Atmosphere must be checked before entry. Requirements of State Authorities concerning conditions for tank entry must be met. Particularly with regard to training of crews for tank entry; work permits; sampling of atmosphere; provision of rescue harness and protective gear as needed.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Liquid.  
Does not mix with water.  
Floats on water.

State	Liquid	Molecular Weight	Not applicable.
Melting Range (°F)	-4	Viscosity	Not Available
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Immiscible
Flash Point (°F)	489.2 (CC)	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	739.4	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	0.914-0.921
Lower Explosive Limit (%)	Not available.	Relative Vapor Density (air=1)	Not Available
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

### APPEARANCE

Clear light yellow oily liquid; does not mix with water. Slight characteristic odour and taste. Mixes with ether, chloroform, petroleum ether, amyl acetate, hexane and carbon disulfide. Slightly soluble in alcohol. On prolonged exposure to air it thickens and becomes rancid. Classed as a semi-drying oil. Acid value 2-6. Saponification value 187-196. Iodine value 109-133. Thiocyanogen value 71-77. Hydroxyl value 8-12. Reichert Meissl value Polenske value

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

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

### STORAGE INCOMPATIBILITY

- HAZARD: Rags wet / soaked with unsaturated hydrocarbons / drying oils auto oxidize; may generate heat and in-time smoulder and ignite. Oily cleaning rags should be collected regularly and immersed in water.
- Avoid reaction with oxidizing agents.
- Materials soaked with plant/ vegetable derived (and rarely, animal) oils may undergo spontaneous combustion.

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

## Section 11 - TOXICOLOGICAL INFORMATION

### CORN OIL

#### TOXICITY AND IRRITATION

##### GAMMA-SITOSTEROL:

##### 1-TRIACONTANOL:

##### 1-HEXACOSANOL:

##### LECITHIN:

##### 10,13-OXY-9,12-DIHYDROXYOCTADECANOIC ACID:

##### 9,12-OXY-10,13-DIHYDROXYOCTADECANOIC ACID:

##### 9,10-DIHYDROXY-12-OCTADECENOIC ACID:

##### 12,13-DIHYDROXY-9-OCTADECENOIC ACID:

##### ALPHA-1-SITOSTEROL:

- No significant acute toxicological data identified in literature search.

##### GAMMA-SITOSTEROL:

##### ALPHA-1-SITOSTEROL:

- Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

### CORN OIL:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
- The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. 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.

##### BETA-SITOSTEROL:

- Not available. Refer to individual constituents.

## Section 12 - ECOLOGICAL INFORMATION

No data

### Ecotoxicity

Ingredient

Persistence: Water/Soil Persistence: Air

Bioaccumulation

Mobility

beta-sitosterol	HIGH	LOW	LOW
1-triacyanol	HIGH	LOW	LOW
1-hexacosanol	LOW	LOW	LOW

#### GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No \_\_\_\_\_  
 \_\_\_\_\_ Corn oil 521 278 0 NI 0 R (2) NI 0 (0) (1) 1 1 Fp 2 / 1 CAS:8001-30-7 / GM4800000

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acute aquatic toxicity LC50/EC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

### Section 13 - DISPOSAL CONSIDERATIONS

#### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

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 equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

### Section 14 - TRANSPORTATION INFORMATION

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

### Section 15 - REGULATORY INFORMATION

#### corn oil (CAS: 8001-30-7) is found on the following regulatory lists;

"Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD Representative List of High Production Volume (HPV) Chemicals", "US - Pennsylvania Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes", "US EPA High Production Volume Program Chemical List", "US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion", "US Toxic Substances Control Act (TSCA) - Inventory", "US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

#### Regulations for ingredients

##### beta-sitosterol (CAS: 83-46-5) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)"

##### alpha-1-sitosterol (CAS: 474-40-8) is found on the following regulatory lists;

"US - Hawaii Air Contaminant Limits", "US - Oregon Permissible Exposure Limits (Z-3)", "US OSHA Permissible Exposure Levels (PELs) - Table Z3"

##### gamma-sitosterol (CAS: 83-47-6) is found on the following regulatory lists;

"US - Hawaii Air Contaminant Limits", "US - Oregon Permissible Exposure Limits (Z-3)", "US OSHA Permissible Exposure Levels (PELs) - Table Z3"

##### 1-triacyanol (CAS: 593-50-0) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "US EPA High Production Volume Chemicals 1994 List of Additions", "US Toxic Substances Control Act (TSCA) - Inventory"

##### 1-hexacosanol (CAS: 506-52-5) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "US EPA High Production Volume Program Chemical List", "US Toxic Substances Control Act (TSCA) - Inventory", "US TSCA Section 4 (e) - ITC Priority Testing List", "US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List", "US TSCA Section 8 (d) - Health and Safety Data Reporting"

lecithin (CAS: 8002-43-5,112099-03-3,117742-89-9,160936-32-3,8035-17-4,8052-43-5,8057-53-2,55128-59-1,252035-82-8,8030-76-0,8038-96-8,93685-90-6) is found on the following regulatory lists;

"GESAMP/EHS Composite List - GESAMP Hazard Profiles", "OECD Representative List of High Production Volume (HPV) Chemicals", "US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications", "US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes", "US EPA High Production Volume Chemicals 1994 List of Additions", "US Food Additive Database", "US Toxic Substances Control Act (TSCA) - Inventory"

##### No data for 10,13-oxy-9,12-dihydroxyoctadecanoic acid (CAS: , Not avail)

No data for 9,12-oxy-10,13-dihydroxyoctadecanoic acid (CAS: , Not avail)

No data for 9,10-dihydroxy-12-octadecenoic acid (CAS: , 53734-70-6, 263399-34-4)

No data for 12,13-dihydroxy-9-octadecenoic acid (CAS: , 5939-06-0)

### Section 16 - OTHER INFORMATION

**LIMITED EVIDENCE**

- Contact with air may produce sufficient heat to ignite combustible materials.\*.
- Cumulative effects may result following exposure\*.
- May produce skin discomfort\*.

\* (limited evidence).

**ND**

Substance CAS Suggested codes beta- sitosterol 83- 46- 5 gamma- sitosterol 83- 47- 6

**Ingredients with multiple CAS Nos**

Ingredient Name CAS lecithin 8002-43-5, 112099-03-3, 117742-89-9, 160936-32-3, 8035-17-4, 8052-43-5, 8057-53-2, 55128-59-1, 252035-82-8, 8030-76-0, 8038-96-8, 93685-90-6 9,10-dihydroxy-12-octadecenoic acid 53734-70-6, 263399-34-4

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■ 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](http://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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