

BCECF/AM

sc-202492

Material Safety Data Sheet



The Power to Question

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

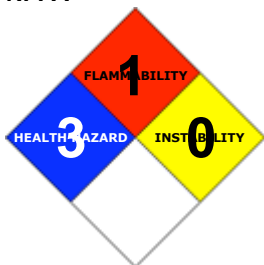
PRODUCT NAME

BCECF/AM

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

SYNONYMS

C42H40O21, "BCECF AM ester", "2' 7' -bis(2-carboxyethyl)-5(6)-carboxyfluorescein acetoxymethyl ester"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1		
Toxicity:	0		
Body Contact:	0		Min/Nil=0
Reactivity:	1		Low=1
Chronic:	2		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.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).
Slight abrasive damage may also result.

SKIN

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

■ 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.

■ 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.

CHRONIC HEALTH EFFECTS

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

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.

Exposure to small quantities may induce hypersensitivity reactions characterized by acute bronchospasm, hives (urticaria), deep dermal wheals (angioneurotic edema), running nose (rhinitis) and blurred vision. Anaphylactic shock and skin rash (non-thrombocytopenic purpura) may occur.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester	117464-70-7	>98
commercial product may contain		
ethyl acetate	141-78-6	

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 or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

INHALED

· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
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 breathing apparatus plus protective gloves.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material. May emit poisonous fumes.

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:

Respirator:

Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing dust and contact with skin and eyes.

MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

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.

RECOMMENDED STORAGE METHODS

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

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
US - Oregon Permissible Exposure Limits (Z-3)	2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester (Inert or Nuisance Dust: (d) Total dust)		10						Oregon Permissible Exposure Limits (PELs) are different than the federal limits.

US OSHA Permissible Exposure Levels (PELs) - Table Z3	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Inert or Nuisance Dust: (d) Respirable fraction)	5	
US OSHA Permissible Exposure Levels (PELs) - Table Z3	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Inert or Nuisance Dust: (d) Total dust)	15	
US - Hawaii Air Contaminant Limits	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not other wise regulated - Total dust)	10	
US - Hawaii Air Contaminant Limits	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not other wise regulated - Respirable fraction)	5	
US - Oregon Permissible Exposure Limits (Z-3)	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Inert or Nuisance Dust:(d) Respirable fraction)	5	Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
Canada - British Columbia Occupational Exposure Limits	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particles (Insoluble or Poorly Soluble) Not Otherwise Classified (PNOC))	10 (N)	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated (PNOR)(f)- Respirable fraction)	5	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated Respirable fraction)	5	
US - California Permissible Exposure Limits for Chemical Contaminants	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated Respirable fraction)	5	(n)
US - Oregon Permissible Exposure Limits (Z-1)	2',7'-bis(2- carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated (PNOR) (f) Total Dust)	10	Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles"

					not otherwise regulated."
US - Michigan Exposure Limits for Air Contaminants	2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated, Respirable dust)	5			
Canada - Prince Edward Island Occupational Exposure Limits	2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10			See Appendix B current TLV/BEI Book
US - Oregon Permissible Exposure Limits (Z-1)	2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	5			Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles not otherwise regulated."
Canada - Alberta Occupational Exposure Limits	ethyl acetate (Ethyl acetate)	400	1440		
Canada - British Columbia Occupational Exposure Limits	ethyl acetate (Ethyl acetate)	150			
US NIOSH Recommended Exposure Limits (RELs)	ethyl acetate (Ethyl acetate)	400	1400		
US OSHA Permissible Exposure Levels (PELs) - Table Z1	ethyl acetate (Ethyl acetate)	400	1400		
US ACGIH Threshold Limit Values (TLV)	ethyl acetate (Ethyl acetate)	400			TLV Basis: upper respiratory tract & eye irritation
US - Minnesota Permissible Exposure Limits (PELs)	ethyl acetate (Ethyl acetate)	400	1400		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air	ethyl acetate (Ethyl acetate)	400	1400		

Contaminants					
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	ethyl acetate (Ethyl acetate)	400	1400		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	ethyl acetate (Ethyl acetate)	400	1400		
US - California Permissible Exposure Limits for Chemical Contaminants	ethyl acetate (Ethyl acetate)	400	1,400		
US - Idaho - Limits for Air Contaminants	ethyl acetate (Ethyl acetate)	400	1400		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	ethyl acetate (Ethyl acetate)	400	1440		
US - Hawaii Air Contaminant Limits	ethyl acetate (Ethyl acetate)	400	1,400		
US - Alaska Limits for Air Contaminants	ethyl acetate (Ethyl acetate)	400	1400		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	ethyl acetate (Ethyl acetate)	400		500	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	ethyl acetate (Ethyl acetate)	400	1,400	400	1,400
US - Washington Permissible exposure limits of air contaminants	ethyl acetate (Ethyl acetate)	400		500	
US - Michigan Exposure Limits for Air Contaminants	ethyl acetate (Ethyl acetate)	400	1400		
Canada - Prince Edward Island Occupational	ethyl acetate (Ethyl acetate)	400			TLV Basis: upper respiratory tract & eye

Exposure Limits				irritation			
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants							
ethyl acetate (Ethyl acetate)	400	1400					
Canada - Nova Scotia Occupational Exposure Limits							
ethyl acetate (Ethyl acetate)	400					TLV Basis: upper respiratory tract & eye irritation	
US - Oregon Permissible Exposure Limits (Z-1)							
ethyl acetate (Ethyl acetate)	400	1,400					
Canada - Northwest Territories Occupational Exposure Limits (English)							
ethyl acetate (Ethyl acetate)	400	1441	500	1801			

ENDOELTABLE

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

■ 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.

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
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

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

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

State	Divided solid	Molecular Weight	880.75
Melting Range (°F)	Not available	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not Applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

Powder; does not mix well with water. Soluble in acetone, methanol.

log Kow 0.66-0.73

Material	Value
----------	-------

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

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

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester

TOXICITY AND IRRITATION

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

2',7'-BIS(2-CARBOXYETHYL)-5(6)-CARBOXYFLUORESCIN AM ESTER:

■ For fluorescein:

Topical, oral, and intravenous use of fluorescein can cause adverse reactions including nausea, vomiting, hives, acute hypotension, anaphylaxis and related anaphylactoid reaction cardiac arrest, and sudden death.

The most common adverse reaction to fluorescein is nausea, due to a difference in the pH from the body and the pH of the sodium fluorescein dye, however a number of other factors are considered contributors as well. The nausea usually is transient and subsides quickly. Hives can range from a minor annoyance to severe, and a single dose of antihistamine may give complete relief. Anaphylactic shock and subsequent cardiac arrest and sudden death are very rare but because they occur within minutes, a health care provider who uses fluorescein should be prepared to perform emergency resuscitation.

Intravenous use has the most reported adverse reactions, including sudden death, but this may reflect greater use rather than greater risk. Both oral and topical uses have been reported to cause anaphylaxis including one case of anaphylaxis with cardiac arrest following topical use in an eye drop. Reported rates of adverse reactions vary from 1% to 6%. The higher rates may reflect study populations that include a higher percentage of persons with prior adverse reactions. The risk of an adverse reaction is 25 times higher if the person has had a prior adverse reaction. The risk can be reduced with prior (prophylactic) use of antihistamines and prompt emergency management of any ensuing anaphylaxis. A simple prick test may help to identify persons at greatest risk of adverse reaction.

Eosins, fluorescein derivatives may produce skin reactions. Dermatitis due to lipstick containing eosin has been observed. Impurities may be responsible. Eosin is bound to keratin so that patch-testing, with cosmetic preparations suspected of being allergens, may not be conclusive as its ability to provoke the immune system is restricted. Other reports suggest that eosin may cause photosensitivity.

No significant acute toxicological data identified in literature search.

TOXICITY

IRRITATION

ETHYL ACETATE:

Oral (rat) LD50: 5620 mg/kg

Eye
(human):
400 ppm

Inhalation (rat) LC50: 1600 ppm/8h

Inhalation (human) TCLo: 400 ppm

Inhalation (Human) TCLo: 400 ppm/4h

Oral (Mouse) LD50: 4100 mg/kg

Intraperitoneal (Mouse) LD50: 709 mg/kg

Oral (Rabbit) LD50: 4935 mg/kg

Oral (Guinea pig) LD50: 5500 mg/kg

CARCINOGEN

PBIT_(PERS~

US - Maine Chemicals of High
Concern List

Carcinogen

US - Rhode Island Hazardous
Substance List

IARC

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein ester	AM HIGH		LOW	LOW
ethyl acetate	LOW	HIGH	MED	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

B. Component Waste Numbers

When ethyl acetate is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U112 (waste code I).

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. 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.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

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

Section 15 - REGULATORY INFORMATION

2',7'-bis(2-carboxyethyl)-5(6)-carboxyfluorescein AM ester (CAS: 117464-70-7) is found on the following regulatory lists;

"IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO","IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Toxic Air Contaminant List Category III","US - Maine Chemicals of High Concern List","US Clean Air Act - Hazardous Air Pollutants","US EPA Toxic Chemical Release Inventory Persistent Bioaccumulative Toxic Chemical (PBT) List","US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

Regulations for ingredients

ethyl acetate (CAS: 141-78-6) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","International Council of Chemical Associations (ICCA) - High Production Volume List","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - Connecticut - Regulations Concerning the Designation of Controlled Drugs - Volatile substances","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Discarded Chemical Products List - ""U"" Chemical Products","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe as used","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","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 EPA Master Testing List - Index I Chemicals Listed","US Food Additive Database","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards","US -Texas Air Monitoring Comparison Values for Evaluating Carbonyls","US Toxic Substances Control Act (TSCA) - Inventory","US TSCA Section 4 - Chemicals Subject to Testing Consent Orders","US TSCA Section 4/12 (b) - Sunset Date/Status"

Section 16 - OTHER INFORMATION

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ 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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: Feb-13-2010

Print Date: Mar-22-2011