

Xangold™ HC
(lutein esters)

Description

Xangold™ HC is a dark reddish-brown solid of lutein esters and small amounts of zeaxanthin and cryptoxanthin esters in granule form. The lutein esters are isolated from marigold flowers (species *targetes erecta*). Lutein esters are found with other carotenoids in yellow/orange fruits and vegetables. The human body hydrolyzes the lutein esters to form free lutein, which is absorbed.

Xangold™ HC consists of at least 60% total carotenoid esters, the majority of which are lutein esters, which equate to a minimum of 30% or 300,000 mcg/gram free lutein after hydrolysis. The balance of the carotenoids are mainly zeaxanthin esters and cryptoxanthin esters.

Hydrolysis of Xangold™ HC lutein esters converts the carotenoid esters into the corresponding free carotenoids resulting in a typical carotenoid profile as follows:

Xangold™ HC

<u>Typical Profile (esters)</u>	<u>mcg/gram</u>	<u>Typical Profile (free)</u>	<u>mcg/gram</u>
Total carotenoids	600,000 mcg	Total carotenoids	300,000 mcg
lutein	562,500 mcg	lutein	281,250 mcg
zeaxanthin	34,500 mcg	zeaxanthin	17,250 mcg
cryptoxanthin	3,000 mcg	cryptoxanthin	1,500 mcg

Names

Xangold™ lutein esters

Assay

Xangold™ HC contains not less than 60% lutein esters and related carotenoids according to spectrophotometric analysis.

Uses

Dietary supplement, antioxidant formulas.

Trademarks

Xangold™ is a trademark of Cognis Corporation.

Solubility

Insoluble in water, soluble in benzene and chloroform, slightly soluble in ethanol and soluble in hexane.

Stability

When stored in a dry place in unopened original container between 50 and 77 degrees F, shelf life is at least 12 months.

Bulk Density

Approximately 0.40gm/cm³

Pack

Xangold™ HC is available in net 5 kg low oxygen impermeable bags. Use or repack contents after opening.



Xangold™ HC

(lutein esters)

Storage	Store in tightly closed containers between 50 and 77 degrees F (10 and 25 degrees C), and protect from heat and light.
Technical Service	For technical assistance contact your local sales representative, or Cognis Corporation Technical Service: 800-328-6199
Documentation	A Certificate of Analysis is provided with each lot. Material Safety Data sheets are available upon request.
To Order	Contact your local sales representative or Customer Service at Voice: 800-673-3702 Fax: 708-579-6152

Revised November 14, 2000

For more information on this and other Cognis Nutrition & Health products, contact our website at:

www.cognishealth.com

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Cognis Nutrition & Health
5325 South Ninth Avenue LaGrange, IL 60525 Phone: 708-579-6150 Fax: 708-579-6152

Xangold® 15% (lutein esters)

Description	<p>Xangold® is a dark reddish-brown suspension of natural lutein esters and small amounts of zeaxanthin and cryptoxanthin esters in vegetable oil. The lutein esters are isolated from marigold flowers. Lutein esters are also found with other carotenoids in yellow/orange fruits and vegetables. The human body hydrolyzes the lutein esters to form free lutein which is absorbed.</p> <p>Xangold® consists of at least 15% total carotenoid esters, the majority of which are lutein esters, which equate to a minimum of 7.5% or 75,000 mcg/gram free lutein after hydrolysis. The balance of the carotenoids are mainly zeaxanthin esters and cryptoxanthin esters.</p> <p>Hydrolysis of Xangold® lutein esters converts the carotenoid esters into the corresponding free carotenoids resulting in a typical carotenoid profile as follows:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">total carotenoids</td> <td style="text-align: right;"><u>80,000 mcg/gram</u></td> </tr> <tr> <td>lutein</td> <td style="text-align: right;">75,000 mcg/gram</td> </tr> <tr> <td>zeaxanthin</td> <td style="text-align: right;">4,600 mcg/gram</td> </tr> <tr> <td>cryptoxanthin</td> <td style="text-align: right;">400 mcg/gram</td> </tr> </table>	total carotenoids	<u>80,000 mcg/gram</u>	lutein	75,000 mcg/gram	zeaxanthin	4,600 mcg/gram	cryptoxanthin	400 mcg/gram
total carotenoids	<u>80,000 mcg/gram</u>								
lutein	75,000 mcg/gram								
zeaxanthin	4,600 mcg/gram								
cryptoxanthin	400 mcg/gram								
Names	Xangold® lutein esters								
Assay	Xangold® contains not less than 15% lutein esters and related carotenoids according to spectrophotometric analysis.								
Uses	Dietary supplement, antioxidant formulas.								
Labeling Guidelines	We recommend that the statement of identity appear as "Lutein esters" and not "Lutein" or Free lutein".								
Trademarks	Xangold® is a registered trademark of Cognis Corporation. ® = trademark registered U.S. Patent and Trademark Office.								
Solubility	Insoluble in water, soluble in benzene, chloroform and hexane, slightly soluble in ethanol.								
Stability	When stored in a dry place in unopened original container between 50 and 77 degrees F, shelf life is at least 24 months.								
Specific Gravity, Typical	Approximately 0.92gm/cm ³								

Xangold[®] 15% (lutein esters)

Package	Xangold [®] is available in net 5 kg metal containers.
Storage	Store in tightly closed containers between 50 and 77 degrees F (10 and 25 degrees C), and protect from heat and light. Xangold [®] is a suspension, therefore settling will occur. It is strongly recommended that the container contents be warmed and stirred vigorously before sampling and use.
Technical Service	For technical assistance contact your local sales manager, or Cognis Nutrition & Health Technical Service at (800) 328-6199.
Documentation	A Certificate of Analysis is provided with each lot. Material Safety Data Sheets are available upon request.
To Order	Contact your local sales representative or Customer Service at Voice: 800-673-3702 Fax: 708-579-6152

For more information on this and other Cognis Nutrition & Health products, contact our website at:

www.cognishealth.com

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Revised 7/23/01

Xangold[®] 15% Oil.doc

HENKEL CAROTENOID ESTER ANALYSIS

SAMPLE #	DESCRIPTION	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein	Lutein			
R981021A1	Xangold 15% esters	0.041	0.047	nd	1.562	3.655	5.551	2.607	0.706	3.600	17.77	0.030	nd	1.426	3.300	4.994	2.273	0.632	3.120	15.77	
Concentration as %W/W																					
OTHER	TOTAL	mono-myrt	mono-palm	mono-stear	di-myrt	myrt-palm	di-palm	palm-stear	di-palm	OTHER	TOTAL									OTHER	TOTAL

NOTES

"OTHER" = sum of unidentified peak areas treated as Lutein dipalmitate.

"TOTAL" = total of concentrations of all individual peaks plus "OTHER".

Xangold® 10% (lutein esters)

Description Xangold® 10% is a dark reddish-brown microencapsulated, *preservative free*, tablet grade powder of natural lutein esters. The lutein esters are isolated from marigold flowers. Lutein esters are also found with other carotenoids in yellow/orange fruits and vegetables. The human body hydrolyzes the lutein esters to form free lutein, which is absorbed.

Xangold® 10% consists of at least 10% total carotenoid esters, the majority of which are lutein esters, which equate to a minimum of 5.0% or 50,000 mcg/gram free lutein after hydrolysis. The balance of the carotenoids is mainly zeaxanthin esters.

Hydrolysis of Xangold® 10% converts the carotenoid esters into the corresponding free carotenoids resulting in a typical carotenoid profile as follows:

Xangold® 10%

<u>Typical Profile (esters)</u>	<u>mcg/gram</u>	<u>Typical Profile (free)</u>	<u>mcg/gram</u>
Total carotenoids	100,000 mcg	Total carotenoids	54,000 mcg
lutein esters	93,000 mcg	lutein	50,000 mcg
zeaxanthin esters	7,000 mcg	zeaxanthin	4,000 mcg

Names Xangold® 10% (lutein esters)

Assay Each gram of this product contains not less than 100,000 micrograms of carotenoid esters using spectrophotometric assay method.

Uses Dietary supplement, such as, antioxidant formulas and multi-antioxidant formula bases in tablets and two-piece hard shell capsules.

Labeling Guidelines We recommend that the statement of identity appear as "Lutein esters" and not "Lutein" or "Free lutein".

Trademarks Xangold® is a trademark of Cognis Corporation.
® = trademark registered U.S. Patent and Trademark Office.

Solubility Insoluble in water, soluble in benzene and chloroform, slightly soluble in hexane and ethanol.

Stability When stored in a dry place in unopened original container between 50° and 77° F (10° and 25° C), shelf life is at least 24 months.

Bulk Density, Typical Approximately 0.70gm/cm³

Xangold[®] 10% (lutein esters)

Package	Xangold [®] 10% is available in net 1 kg and 5 kg containers.
Storage	Store in tightly closed containers between 50° and 77° F (10° and 25° C), and protect from heat and light.
Technical Service	For technical assistance contact your local sales manager, or Cognis Nutrition & Health Technical Service at (800) 328-6199.
Documentation	A Certificate of Analysis is provided with each lot. Material Safety Data Sheets are available upon request.
To Order	Contact your local sales representative or Customer Service at Voice: 800-673-3702 Fax: 708-579-6152

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Revised 7/19/01

Xangold[®] 10% Beadlet.doc

Xangold® 10%
(lutein esters)

Description

Xangold® 10% is a dark reddish-brown tablet-grade powder of lutein esters. The lutein esters are isolated from marigold flowers and are microencapsulated with preservative-free ingredients. The human body hydrolyzes the lutein esters to form free lutein, which is absorbed. Xangold® 10% Beadlets consists of at least 10% total carotenoid esters, mainly lutein esters, which equate to a minimum of 5.0% or 50,000 mcg/gram free lutein after hydrolysis. The balance of the carotenoids is mainly zeaxanthin esters.

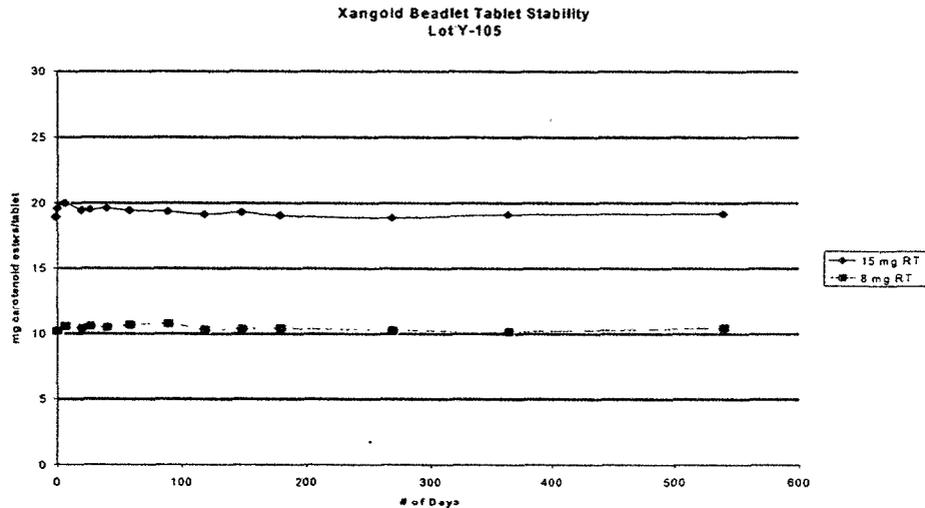
Product Specifications

Test	Specification	Method
Assay, % carotenoid esters	10.0%	Cognis
Heavy Metals as Pb	< 10 ppm	USP Method II
Arsenic	< 3 ppm	USP
Bulk Density	0.65 – 0.75 gm/ml	Packed
Loss on Drying	7.0% max	USP
Particle Size		
Thru 25		100%
Thru 30		95% min
Thru 80		5% max
Thru 120		3% max
Microbiological		
Total Plate Count		<1000/gram
E. Coli		Negative
Yeasts and Molds		<300/gram
Salmonella		Negative
Staphylococcus		Negative

Other Product Information

Ingredients	
Total Carotenoid Esters	10.0%
Lipids	10.0-20.0%
Gelatin	40.0-60.0%
Sucrose	10.0-20.0%
Mixed Tocopherols	0.0-2.0%
Water (loss on drying)	0.0-7.0%
Sorbitan Monostearate	0.0-1.0%
Silicon Dioxide	0.0-0.10%

**Xangold® 10%
(lutein esters)**



NLEA Data

The following data were obtained from an outside laboratory analysis:

Test Description	Units	Xangold® 10%
Calories (with Carotenoid Correction)	Kcal/100gm	420
Calories from Fat	Kcal/100gm	158
Calories from Saturated Fat	Kcal/100gm	80
Total Fat	%	17.60
Total Carbohydrates (with Carotenoid Correction)	%	15.40
Total Dietary Fiber	%	4.30
Total Sugar	%	19.10
Protein by Dumas	%	50.30
Total Vitamin C	mg/100gm	<1.0
Moisture	%	4.72
Ash Analysis	%	0.55
Cholesterol by GC	mg/100gm	<1.00
Sodium	mg/100gm	170
Potassium	mg/100gm	8.64
Total Carotenoid Esters, Wt%	%	11.4
Total	%	100.0

Notes: Moisture: Powders by Vacuum Oven; Oils by Karl-Fischer
Total consists of Fat, Carbohydrates, Carotenoid Esters, Protein, Moisture, and Ash

For more information on this and other Cognis Nutrition & Health products, visit our website at:

www.cognishealth.com

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Rev. 7/16/01

10% Beadlets

HENKEL CAROTENOID ESTER ANALYSIS

SAMPLE #	DESCRIP	Concentration as %W/W																				
		Lutein	Zeaxanth	Cryptox	Lutein	Lutein	mono-myrt	mono-palm	Lutein	mono-stear	Lutein	di-myrt	Lutein	myrt-palm	Lutein	di-palm	Lutein	palm-stear	Lutein	di-stear	OTHER	TOTAL
S000125A	Unsapon Xangold	nd	nd	nd	nd	0.103	0.078	0.791	2.089	3.325	1.726	0.502	3.140	11.75								
S000125A	Sapon Xangold	4.120	1.500	0.032	0.074	0.231	0.080	nd	nd	nd	nd	nd	0.159	6.20								

NOTES

"OTHER" = sum of unidentified peak areas treated as Lutein dipalmitate (or Lutein for saponified sample).
 "TOTAL" = total of concentrations of all individual peaks plus "OTHER".

Analysis Date: 2/22/2000
 Work performed for Carrie Potaczek.

COGNIS CORPORATION

Material Safety Data Sheet

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Revised: 06/25/2001
Supercedes: 03/31/2000

PRODUCT NAME: XANGOLD 10% (BEADLET)
PRODUCT DESCRIPTION: Mixed Natural Plant Extract
CASRN: Not Applicable - Mixture
MANUFACTURER: Cognis Corporation
4900 Este Avenue
Cincinnati, OH 45232
Phone: 800-543-7370 Fax: 513-482-5515
EMERGENCY NUMBERS:
CHEMTREC: 800-424-9300

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL	CONCENTRATION (Wt.%)	EXPOSURE LIMITS
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This product does not contain any hazardous chemicals as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3: HAZARDS IDENTIFICATION

***** Emergency *****
***** Overview *****

Low hazard for usual industrial or commercial handling.

Dark yellow beadlets

SKIN CONTACT:

Considered to be non-toxic and non-irritating based on toxicological data for components.

EYE CONTACT:

Considered to be non-toxic and non-irritating based on toxicological data for components.

INHALATION:

Considered to be non-toxic based on toxicological data for components.

INGESTION:

Considered to be practically non-toxic based on animal tests.

CHRONIC EFFECTS:

Not Determined.

OTHER HEALTH EFFECTS:

The preceding was estimated from safety data for components.

PRIMARY ROUTES OF EXPOSURE: Skin, Oral

SECTION 4: FIRST AID MEASURES

SKIN CONTACT:

First aid is not expected to be required. If symptoms develop, get medical aid.

EYE CONTACT:

First aid is not expected to be required. If necessary, flush with water for 15 minutes. If symptoms develop, get medical aid.

INHALATION:

Considered to be non-toxic based on toxicological data for components.

INGESTION:

No first aid expected to be required.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: Not Applicable

LFL: Not Determined

UFL: Not Determined

AUTOIGNITION TEMPERATURE Not Determined

RECOMMENDED EXTINGUISHING MEDIA:

Carbon dioxide, Dry chemical, Foam, Water spray

SPECIAL FIRE FIGHTING PROCEDURES:

Not determined.

UNUSUAL FIRE OR EXPLOSION HAZARDS:

None Known

HAZARDOUS COMBUSTION PRODUCTS:

Acroleins, Carbon dioxide, Carbon monoxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO TAKE IN CASE OF SPILL OR LEAK:

Pick up spilled material and containerize. Vacuum area or flush with water to remove residues.

SECTION 7: HANDLING AND STORAGE

Store away from heat and direct sunlight.

Protect from freezing in storage and transit.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION:

Safety glasses

SKIN PROTECTION:

Not applicable under normal use conditions

RESPIRATORY PROTECTION:

Not applicable

ENGINEERING CONTROLS:

Not necessary under normal use conditions

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

APPEARANCE: Dark yellow beadlets

ODOR: Mild Marigold

ODOR THRESHOLD: Not Determined

pH: Not Determined

MELTING POINT: 60 Deg C

BOILING POINT: N/A Deg C

SPECIFIC GRAVITY: 0.260

SOLUBILITY IN WATER: Insoluble

PERCENT VOLATILES (by Wt.): 0 @ 70 Deg F.

VAPOR DENSITY: Not Determined

VAPOR PRESSURE: Not Determined

EVAPORATION RATE (N-BUTYL ACETATE=1): Not determined

VOC CONTENT (EPA Method 24): 0.0 %

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Normally Stable

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLE MATERIALS:

Oxidizers, Copper, Bronze.

CONDITIONS TO AVOID:

Not determined.

HAZARDOUS DECOMPOSITION PRODUCTS:

Acroleins, Carbon dioxide, Carbon monoxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL TOXICITY:

Not Determined

ENVIRONMENTAL FATE:

Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

This product, if disposed as shipped, is not a hazardous waste as specified in 40 CFR 261. Dispose of in an approved landfill in accordance with state and local regulations.

SECTION 14: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: NOT REGULATED BY THIS MODE OF TRANSPORTATION

UN/NA: N/A

DOT HAZARD CLASS: Not Determined

DOT HAZARDOUS MATERIALS:

Not Applicable

EMERGENCY RESPONSE GUIDE NUMBER: Not Determined

PACKAGING GROUP: Not Determined

SECTION 15: REGULATORY INFORMATION

TSCA INVENTORY STATUS:

This product is excluded pursuant to Section 3(2)(B)(vi) of the Toxic Substances Control Act.

TSCA 12(b) COMPONENTS:

None

SARA 311/312 HAZARD CATEGORIES:

SARA 313 TOXIC CHEMICALS:

None

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES:

None

CERCLA HAZARDOUS SUBSTANCES:

None

CALIFORNIA PROPOSITION 65 COMPONENTS:

None

SECTION 16: OTHER INFORMATION

HMIS RATINGS: HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0

NFPA RATINGS: HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0 OTHER: None

THE FOLLOWING WARNING INFORMATION IS PROVIDED ON THE LABEL FOR THIS PRODUCT:

Low hazard for usual industrial or commercial handling.

CHRONIC EFFECTS:

Not Determined.

FIRST AID - INHALATION:

Considered to be non-toxic based on toxicological data for components.

FIRST AID - SKIN CONTACT:

First aid is not expected to be required. If symptoms develop, get medical aid.

FIRST AID - EYE CONTACT:

First aid is not expected to be required. If necessary, flush with water for 15 minutes. If symptoms develop, get medical aid.

FIRST AID - INGESTION:

No first aid expected to be required.

UNUSUAL FIRE OR EXPLOSION HAZARDS:

None Known

SPECIAL FIRE FIGHTING PROCEDURES:

Not determined.

STEPS TO TAKE IN CASE OF SPILL OR LEAK:

Pick up spilled material and containerize. Vacuum area or flush with water to remove residues.

HANDLING AND STORAGE:

Store away from heat and direct sunlight.

Protect from freezing in storage and transit.

ABBREVIATIONS USED:

ND or N/D = Not Determined

NA or N/A = Not Applicable or Not Available

NE or N/E = Not Established

N/AP = Not Applicable

All information, recommendations, and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, express or implied, is made by Cognis Corporation as to the effects of such use, the results obtained, or the safety and toxicity of the product nor does Cognis Corporation assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

PREPARED BY:

Cognis Corporation
Product Safety/Regulatory Affairs
4900 Este Avenue
Cincinnati, OH 45232

Phone: 513/482-3563 Fax: 513/482-2462

C O G N I S C O R P O R A T I O N

Material Safety Data Sheet

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Revised: 06/25/2001
Supercedes: 05/08/2000

PRODUCT NAME: XANGOLD 15% (OIL)
PRODUCT DESCRIPTION: Lutein Esters
SYNONYMS: Mixed Natural Plant Extract
CASRN: Not Applicable - Mixture
MANUFACTURER: Cognis Corporation
4900 Este Avenue
Cincinnati, OH 45232
Phone: 800-543-7370 Fax: 513-482-5515
EMERGENCY NUMBERS:
CHEMTREC: 800-424-9300

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL	CONCENTRATION (Wt.%)	EXPOSURE LIMITS
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This product does not contain any hazardous chemicals as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3: HAZARDS IDENTIFICATION

***** Emergency *****
***** Overview *****

DARK YELLOW EMULSION

SKIN CONTACT:

Considered to be non-toxic and non-irritating based on toxicological data for components.

EYE CONTACT:

Considered to be non-toxic and non-irritating based on toxicological data for components.

INHALATION:

No adverse health effects are known.

INGESTION:

Considered to be non-toxic based on toxicological data for components.

CHRONIC EFFECTS:

Not Determined.

OTHER HEALTH EFFECTS:

No carcinogenic, mutagenic or teratogenic effects are known.
No effects of chronic exposure or target organ effects are known.
No exposure limits have been established for this product as formulated.

PRIMARY ROUTES OF EXPOSURE: Skin, Oral

SECTION 4: FIRST AID MEASURES

SKIN CONTACT:

First aid is not expected to be required. If symptoms develop, get medical aid.

EYE CONTACT:

First aid is not expected to be required. If necessary, flush with water for 15 minutes. If symptoms develop, get medical aid.

INHALATION:

Move to fresh air. If symptoms persist, consult a Physician.

INGESTION:

If swallowed in large quantities, get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: >390 Deg F (Cleveland Open Cup)
LFL: Not Determined UFL: Not Determined
AUTOIGNITION TEMPERATURE Not Determined

RECOMMENDED EXTINGUISHING MEDIA:

Carbon dioxide, Dry chemical, Foam, Water spray

SPECIAL FIRE FIGHTING PROCEDURES:

Not determined.
Use self-contained breathing apparatus in confined areas

UNUSUAL FIRE OR EXPLOSION HAZARDS:

None Known

HAZARDOUS COMBUSTION PRODUCTS:

Acroleins, Carbon dioxide, Carbon monoxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO TAKE IN CASE OF SPILL OR LEAK:

Add dry material to absorb spill (if large spill, dike to contain).
Using recommended protective equipment, pick up bulk of spill and
containerize for recovery or disposal. Flush area with water to remove
residues.

SECTION 7: HANDLING AND STORAGE

Store in closed containers at a temperature between 10 and 25 Deg C (50
and 78 Deg F). Protect from light. Do not refrigerate. Do not expose
this product to temperatures above 40 Deg C for longer than it takes
for material transfer.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION:

Safety glasses

SKIN PROTECTION:

Rubber or plastic gloves.

RESPIRATORY PROTECTION:

Not applicable

ENGINEERING CONTROLS:

Not necessary under normal use conditions

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: DARK YELLOW EMULSION

ODOR: SOYBEAN OIL

ODOR THRESHOLD: Not Determined

pH: 0.0 @ 0.0 %

MELTING POINT: N/D Deg C

BOILING POINT: N/D Deg C

SPECIFIC GRAVITY: 0.840

SOLUBILITY IN WATER: Negligible (< 0.1 %)

PERCENT VOLATILES (by Wt.): NIL @ 70 Deg F.

VAPOR DENSITY: Not Determined

VAPOR PRESSURE: Not Determined

EVAPORATION RATE (N-BUTYL ACETATE=1): Not determined

VOC CONTENT (EPA Method 24): 0.0 %

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Normally Stable

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLE MATERIALS:
Oxidizers, Copper, Bronze.

CONDITIONS TO AVOID:
Not determined.

HAZARDOUS DECOMPOSITION PRODUCTS:
Acroleins, Carbon dioxide, Carbon monoxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL TOXICITY:
Not Determined

ENVIRONMENTAL FATE:
Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

This product, if disposed as shipped, is not a hazardous waste as specified in 40 CFR 261. Consult state or local officials for proper disposal method.

SECTION 14: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: NOT REGULATED BY THIS MODE OF TRANSPORTATION
UN/NA: N/A
DOT HAZARD CLASS: Not Determined
DOT HAZARDOUS MATERIALS:
Not Applicable
EMERGENCY RESPONSE GUIDE NUMBER: Not Determined
PACKAGING GROUP: Not Determined

SECTION 15: REGULATORY INFORMATION

TSCA INVENTORY STATUS:

This product and/or all of its components are included on the TSCA Inventory of Chemical Substances.

TSCA 12(b) COMPONENTS:

None

SARA 311/312 HAZARD CATEGORIES:

SARA 313 TOXIC CHEMICALS:

None

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES:

None

CERCLA HAZARDOUS SUBSTANCES:

None

CALIFORNIA PROPOSITION 65 COMPONENTS:

None

SECTION 16: OTHER INFORMATION

HMIS RATINGS: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0

NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0 OTHER: None

THE FOLLOWING WARNING INFORMATION IS PROVIDED ON THE LABEL FOR THIS PRODUCT:

CHRONIC EFFECTS:

Not Determined.

FIRST AID - INHALATION:

Move to fresh air. If symptoms persist, consult a Physician.

FIRST AID - SKIN CONTACT:

First aid is not expected to be required. If symptoms develop, get medical aid.

FIRST AID - EYE CONTACT:

First aid is not expected to be required. If necessary, flush with water for 15 minutes. If symptoms develop, get medical aid.

FIRST AID - INGESTION:

If swallowed in large quantities, get medical attention.

UNUSUAL FIRE OR EXPLOSION HAZARDS:

None Known

SPECIAL FIRE FIGHTING PROCEDURES:

Not determined.

Use self-contained breathing apparatus in confined areas

STEPS TO TAKE IN CASE OF SPILL OR LEAK:

Add dry material to absorb spill (if large spill, dike to contain).

Using recommended protective equipment, pick up bulk of spill and containerize for recovery or disposal. Flush area with water to remove residues.

HANDLING AND STORAGE:

Store in closed containers at a temperature between 10 and 25 Deg C (50 and 78 Deg F). Protect from light. Do not refrigerate. Do not expose this product to temperatures above 40 Deg C for longer than it takes for material transfer.

ABBREVIATIONS USED:

ND or N/D = Not Determined
NA or N/A = Not Applicable or Not Available
NE or N/E = Not Established
N/AP = Not Applicable

All information, recommendations, and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, express or implied, is made by Cognis Corporation as to the effects of such use, the results obtained, or the safety and toxicity of the product nor does Cognis Corporation assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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