AkzoNobel
Surface Chemistry

ELFAN® AT 84 G

Sodium Cocoyl Isethionate

Specification

Appearance Light yellowish granular

Parameter	Limits	Method
% Water	2 maximum	
Acid Value (mg KOH/g)	20 – 33	
Activity (meq/g)	2.31 – 2.46	
Klett Color	35 maximum	
Gardner Color	5 maximum	
pH	4.5 – 6.0	
Saponification Value (mg KOH/g)	160 minimum	

Measurements

Klett Color is measured as 5% in 30/70 IPA/water.

The pH is measured as 10% in water.

Version AN 25.1AN Issued 3 October 2012
Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21- 6774-2936, e-mail: personalcare.asia@akzonobel.com

www.akzonobel.com/PersonalCare

Elfan® AT 84 / Elfan® AT 84 G

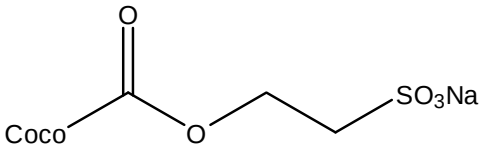
AkzoNobel
Tomorrow's Answers Today

Elfan® AT 84 / Elfan® AT 84 G
INCI: Sodium Cocoyl Isethionate

Mild Anionic Surfactant for Cleansing Systems

INTRODUCTION

Elfan® AT 84/Elfan AT 84 G is an easy to use non-ethoxylated sulfate-free anionic surfactant. It provides good cleansing and is extremely gentle on skin with an excellent dermatological profile. Elfan AT 84/Elfan AT 84 G provides rich, creamy foam for superior cleansing - even in hard water. Skin and scalp maintain a very healthy and conditioned look, with minimal impact on the skin barrier. Elfan AT 84/Elfan AT 84 G is based on a vegetable fatty acid and is readily biodegradable. Its chemical structure is as follows:



Chemical Structure of Elfan AT 84/Elfan AT 84 G

APPLICATION AREAS

Due to the extreme mildness and high foaming performance of Elfan AT 84/Elfan AT 84G it is suitable for the following applications:

Shampoo, 2-in-1 Shampoo/Conditioner, Mousse, Bath and Shower Gel, 2-in-1 Shower Gel/Body Lotion, Body Wash, Facial Wash, Liquid Hand Soap, Syndet and Combi Soap Bar, Baby Cleanser, Shaving Cream, and Toothpaste.

FEATURES / BENEFITS

Excellent dermatological profile	Extra mild, ideal for baby products and sensitive skin
Dense creamy lather	Formulations with excellent creamy and stable foam
Superior skin cleansing	Suitable for facial cleansers
Low impact on skin barrier	Skin conditioning
Lime soap dispersancy	No soapy residue
Non-dusty granules for easy handling (G version)	Advantages in manufacturing process
Extreme smoothness without grittiness for micronized quality	Sensory enhancement in bar soaps
Elegant after-feel	Luxurious bath and shower experience
Readily biodegradable	Environmentally friendly

SUGGESTED USE LEVELS, AS SUPPLIED

3 to 20%, dependent on product application

Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21-6774-2936, e-mail: personalcare.asia@akzonobel.com
www.akzonobel.com/PersonalCare

Elfan® AT 84 / Elfan® AT 84 G

FORMULATION GUIDELINES

Elfan AT 84/Elfan AT 84 G should be added with mixing to the water phase at 35 to 45°C. The maximum heating temperature for Elfan AT 84/Elfan AT 84 G is 60°C. The ideal pH range to formulate with Elfan AT 84/Elfan AT 84 G is typically from 5.5 to 7.5.

PERFORMANCE PROPERTIES

Foam Performance

Elfan AT 84/Elfan AT 84 G exhibit great foam performance regarding foam height and foam stability in both soft and hard water, as displayed in Figure 1.

Figure 1: Foam Height of Elfan AT 84 G

Ross-Miles 40˚C, 0.2%

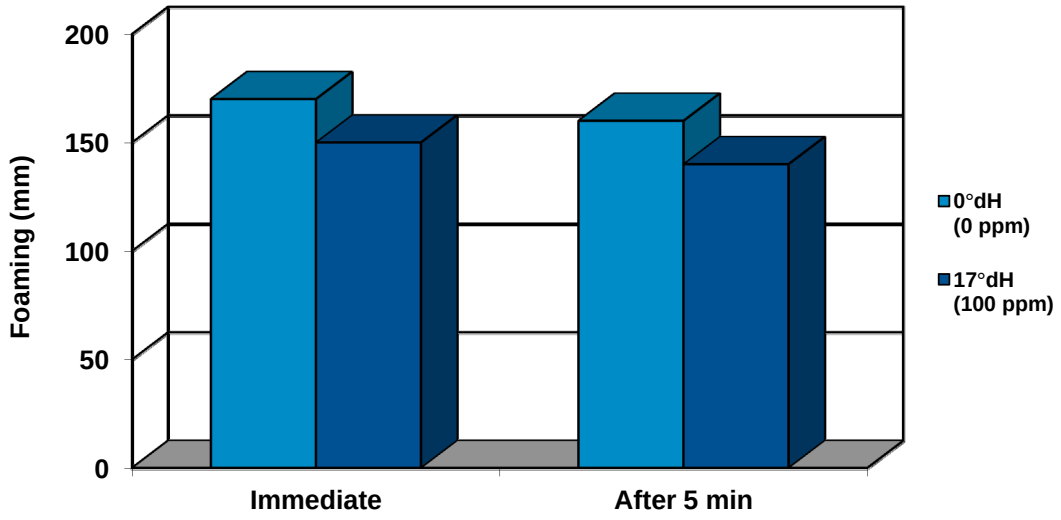


Figure 1: Foaming performance is measured by foam height of a 0.2 % solution of Elfan AT 84 G using Ross-Miles at 40 °C and water hardness of 0 °dH and 17 °dH (Grad deutsche Härte, German degree). Good foam quality is maintained, even after 5 minutes.

Transepidermal Waterloss (TEWL) and Skin Humidity

The TEWL study was performed using the Flex Wash Method, where a test panel consisting of 20 healthy males and females wash their forearms with a 5% active surfactant solution twice a day for 5 days. The surfactants evaluated were Elfan AT 84 G, Sodium Lauryl Sulfate and Magnesium Laureth Sulfate. The TEWL measurements were taken before and after washing using the Evaporimeter EP1. Relative TEWL % is shown in Figure 2.

Skin humidity measurements with the Corneometer were made in the same manner and parallel to the TEWL measurement. Relative dry out % is shown in Figure 3.

Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21-6774-2936, e-mail: personalcare.asia@akzonobel.com
www.akzonobel.com/PersonalCare

Figure 2: Transepidermal Waterloss Comparisons

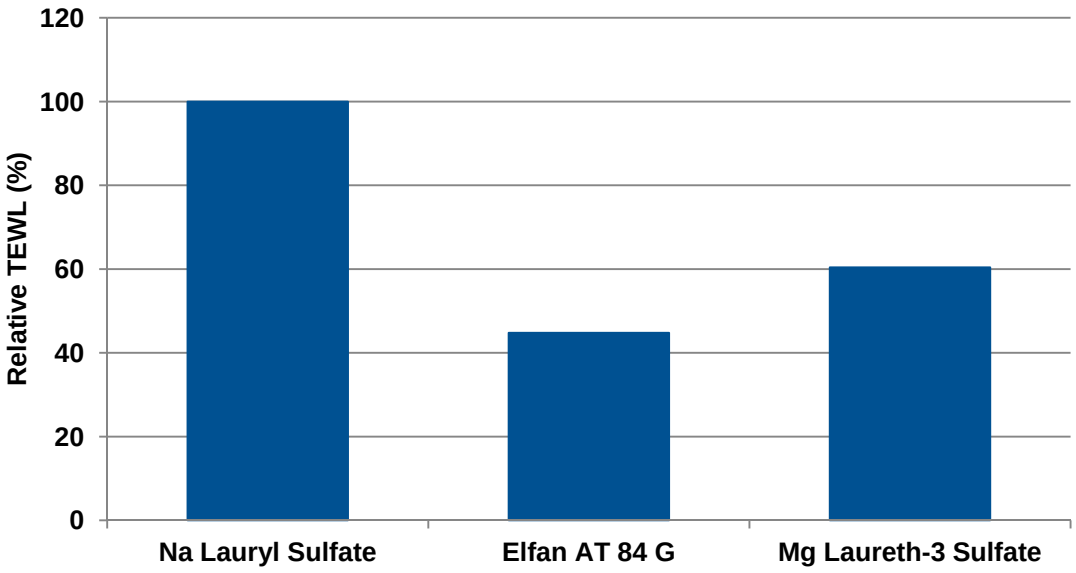


Figure 2: Elfan AT 84 G exhibits less TEWL compared to both Magnesium Laureth Sulfate and Sodium Lauryl Sulfate.

Figure 3: Skin Humidity Comparisons

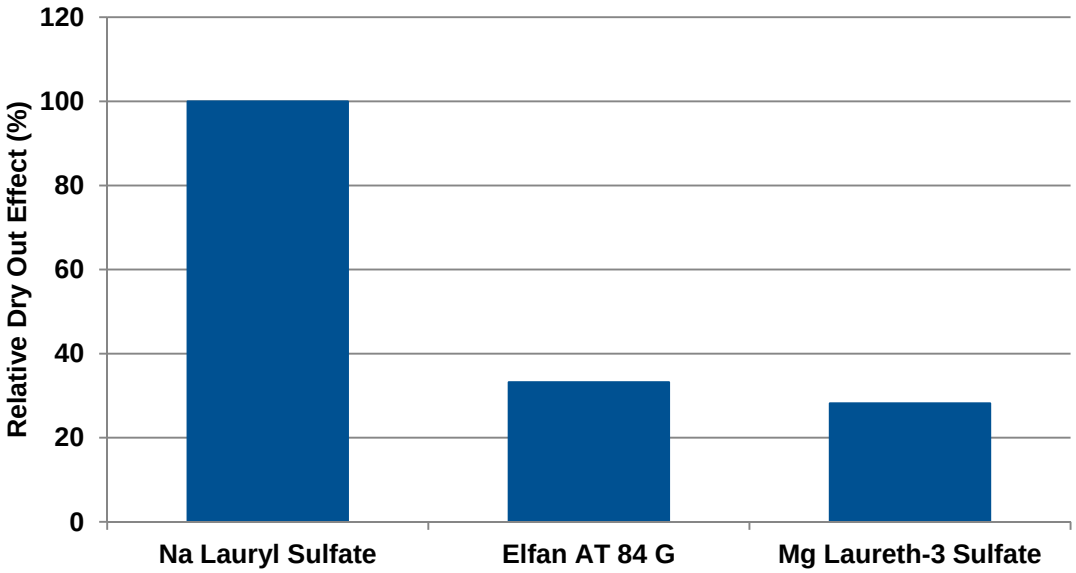


Figure 3: Elfan AT 84 G and Magnesium Laureth Sulfate showed significantly less drying than Sodium Lauryl Sulfate, which would equate to an improved skin barrier and less damage to the skin cells.

Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21-6774-2936, e-mail: personalcare.asia@akzonobel.com
www.akzonobel.com/PersonalCare

Elfan® AT 84 / Elfan® AT 84 G

Skin Cleansing

The skin cleansing performance was evaluated using the Forearm Skin Wash Test. A test panel consisting of 20 healthy females had their forearms washed with the Forearm washing machine using a 5% active surfactant solution. The surfactants tested were Elfan AT 84 G, Sodium Lauryl Sulfate, and Magnesium Laureth Sulfate, with pure water used as reference. The skin color was measured with a Minolta Chromameter before and after test soil treatment and then after washing.

Elfan AT 84 G outperformed the cleansing performance of Magnesium Laureth-3 Sulfate and showed a similar performance to the very efficient Sodium Lauryl Sulfate as shown in Figure 4.

Figure 4: Cleansing Improvement %

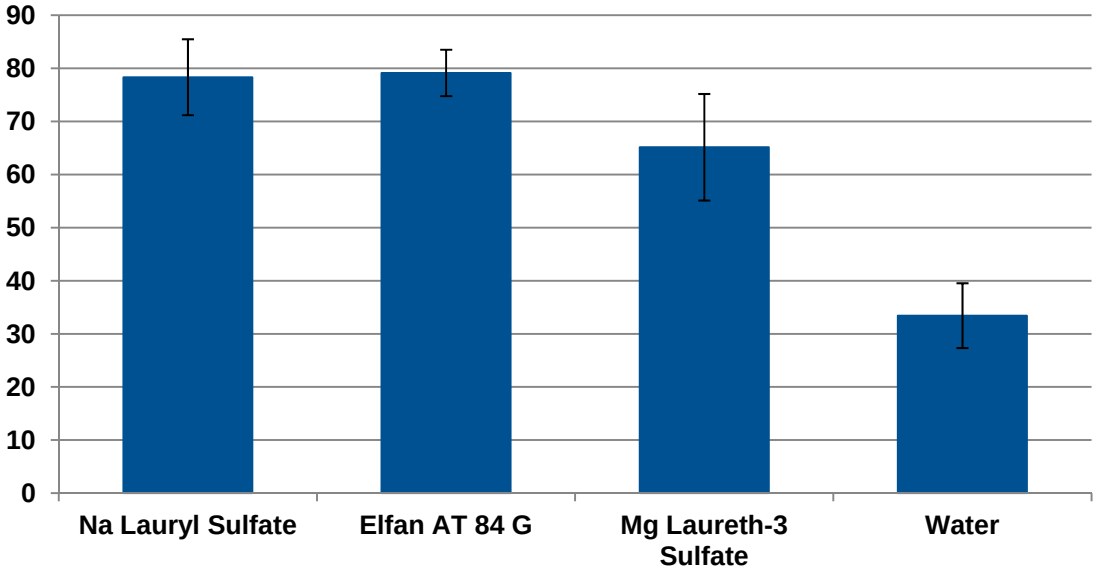


Figure 4: Cleansing improvement by usage of 5% active matter surfactant solution. Elfan AT 84 G provides similar cleansing improvement with better skin moisturization properties compared to sodium lauryl sulfate.

TYPICAL PROPERTIES

Property	Value
Activity, MW = 345	80 – 84%
Krafft point	30°C
CMC, 40°C	0.12 g/l
Surface tension (Du Nouy), 40°C, 0.1% a.m. DIN 53914	22.5 mN/m
Solubility	In water above Krafft point > 30°C
Dispersible	In water at 20°C

Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21-6774-2936, e-mail: personalcare.asia@akzonobel.com
www.akzonobel.com/PersonalCare

Elfan® AT 84 / Elfan® AT 84 G

STORAGE AND HANDLING

Keep container tightly closed and store in a cool, well-ventilated area.

HEALTH AND SAFETY

Information on Elfan AT 84/Elfan AT 84 G relating to the EU Cosmetics Directive 76/768/EEC is available on request.

* REMARK

Elfan® AT 84 represents the product supplied in powder form whereas **Elfan® AT 84 G** represents the product supplied in granular form.

Elfan AT 84/Elfan AT 84 G stands for both versions of this product - the powder and the granular form.

April 2010, REV 10.22.2012

Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21-6774-2936, e-mail: personalcare.asia@akzonobel.com
www.akzonobel.com/PersonalCare

ELFAN AT 84 G Mild, Anionic Surfactant

Regulatory Information

Parameter	
CAS Number	61789-32-0
Australia	Yes
Canada	DSL
China	Yes
Europe	EINECS listed monomers and substances, EINECS,2630525
Japan	Yes
Korea	Yes, ECL Number: 14683
New Zealand	Yes
USA (TSCA)	Yes

Version AN 26.0 Issued 23 August 2011
Europe: Sempach-Station, Switzerland, T: +41 (0)41-469-69-66, F: +41 (0)41-469-69-06, e: personalcare.europe@akzonobel.com
Americas: Bridgewater, New Jersey, U.S.A., T: 888 331-6212, F: 908-707-3664, e: personalcare.usa@akzonobel.com
South America: Itupeva, SP, Brazil, T: 55-11-4591-8800, F: 55-11-4591-8804, e: personalcare.southamerica@akzonobel.com
Asia/Pacific: Shanghai, P.R. China, Tel: +86-21-5774-5700, Fax: +86-21- 6774-2936, e-mail: personalcare.asia@akzonobel.com

Surface Chemistry
Personal Care

10 Finderne Ave
Bridgewater, NJ
08807
United States

T +888-331-6212
F +908-707-3664
www.akzonobel.com/personalcare

AkzoNobel
Tomorrow's Answers Today

Sunday, 21 August 2011

RE: ELFAN® AT 84 G Material Origin BSE

To: Whom it may concern,

AkzoNobel Surface Chemistry Personal Care has completed a review of the ingredients used in the manufacture of our personal care products. As a result of this exercise, we are able to certify that the product below is free of any animal derived ingredients.

ELFAN AT 84 G Mild, Anionic Surfactant

Specifically, this product is derived from plant sources.

Sincerely,

Damani Parran
Regulatory, US
908 707-3756

Material Safety Data Sheet

MSDS# 15-0713

Section 1. Chemical Product and Company Identification

Product name **ELFAN® AT 84 G**

Material Uses : Surfactant.

Supplier/ Manufacturer

AKZO NOBEL SURFACE CHEMISTRY LLC
525 West Van Buren
Chicago, IL 60607-3823
www.surfactants.akzonobel.com

AKZO NOBEL CHEMICALS LTD.
1 City Centre Drive, Suite 318
Mississauga, Ontario L5B 1M2
Canada

In Case of Emergency

CHEMTREC:	800-424-9300
CANUTEC:	613-996-6666
Medical/Handling:	914-693-6946
Product/Technical:	800-906-9977

Section 2. Hazards Identification

Physical State Solid. (Powder.)

Color White.

Odor Coconut.

Emergency Overview CAUTION!
MAY CAUSE EYE IRRITATION.

Avoid contact with eyes. Wash thoroughly after handling.

Routes of Entry Absorbed through skin. Eye contact.

See Toxicological Information (section 11)

Section 3. Composition/ Information on Ingredients

Name	CAS #	% by Weight
fatty acids, coco, 2-sulfoethyl esters, sodium salts	61789-32-0	82-100

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Cold water may be used. Get medical attention.

Skin Contact Wash with soap and water. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Continued on Next Page

Section 5. Fire Fighting Measures

Flammability of the Product May be combustible at high temperature.

Fire Fighting Media and Instructions SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Protective Clothing (Fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards Material in powder form, capable of creating a dust explosion. No sparking tools should be used. Take precautionary measures against static discharges.

Section 6. Accidental Release Measures

Small Spill and Leak Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill and Leak Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Handling Avoid contact with eyes. Wash thoroughly after handling.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area.

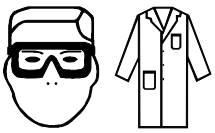
Section 8. Exposure Controls/ Personal Protection

Engineering Controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

- **Eyes** Splash goggles.
- **Body** Lab coat.
- **Respiratory** Not applicable.
- **Hands** Not applicable.
- **Feet** Suitable protective footwear.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Ingredient Name	Exposure Limits United States
fatty acids, coco, 2-sulfoethyl esters, sodium salts	Not available.

Continued on Next Page

Section 9. Physical and Chemical Properties

Physical State	Solid. (Powder.)
Color	White.
Odor	Coconut.
Density	0.65 g/cm^3
Solubility	Very slightly soluble in cold water.
Dispersion Properties	Not available.
Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals

Ingredient Name or Product name	Test	Result	Route	Species
fatty acids, coco, 2-sulfoethyl esters, sodium salts	LD50	4330 mg/kg	Oral	Rat
	LD50	>2000 mg/kg	Oral	Rat

Chronic Effects on Humans	**MUTAGENIC EFFECTS**: Non-mutagenic for bacteria and/or yeast. [ELFAN® AT 84 G].
Acute Effects Skin	Non-irritating to the skin.
Acute Effects Eyes	Moderately irritating to the eyes.
Special Remarks on Other Toxic Effects on Humans	:

Section 12. Ecological Information

Ecotoxicity

Ingredient Name or Product name	Species	Period	Result
fatty acids, coco, 2-sulfoethyl esters, sodium salts	Fish (LC50)	96 hour(s)	31.6 mg/l
	Daphnia (EC50)	48 hour(s)	46.9 mg/l

Biodegradable/OECD	Readily biodegradable.

Section 13. Disposal Considerations

Waste Information	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Consult your local or regional authorities.

Continued on Next Page

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
DOT Classification	Not regulated.	-	- -	-		-
TDG Classification	Not regulated.	-	- -	-		-
IMDG Class	Not regulated.	-	- -	-		-
IATA-DGR Class	Not regulated.	-	- -	-		-

Section 15. Regulatory Information

HCS Classification

Not controlled under the HCS (United States).

U.S. Federal Regulations

TSCA: All intentionally present components are listed on the TSCA inventory.

DSL: All intentionally present components are listed on the DSL.

TSCA 5(a)2 final significant rules: No products were found.

CERCLA: Hazardous substances.: No products were found.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

SARA 313 Form R Reporting Requirements
No products were found.

SARA 313 Supplier Notification
No products were found.

Other Regulations

Not applicable.

State Regulations

No products were found.

California prop. 65: No products were found.

WHMIS (Canada)

Not controlled under WHMIS (Canada).

CEPA DSL: fatty acids, coco, 2-sulfoethyl esters, sodium salts

European Union

Component	EC Number	EC Status	EC Annex
fatty acids, coco, 2-sulfoethyl esters, sodium salts	263-052-5	Not available.	Not available.

Continued on Next Page

Other International Lists Australia (NICNAS): fatty acids, coco, 2-sulfoethyl esters, sodium salts

China: fatty acids, coco, 2-sulfoethyl esters, sodium salts

Korea (TCCL): fatty acids, coco, 2-sulfoethyl esters, sodium salts

Philippines (RA6969): fatty acids, coco, 2-sulfoethyl esters, sodium salts

Section 16. Other Information

Hazardous Material Information System (U.S.A.)

Health	2
Fire Hazard	1
Physical Hazards	0
Personal Protection	

National Fire Protection Association (U.S.A.)

Other Information Elfan® is a registered trademark of Akzo Nobel or affiliated companies and is registered in one or more countries including the United States.

Validation Date	**5/25/2010.**	**Validated by**	**Product Safety Specialist**
Previous Validation Date	5/8/2007.	**Print Date**	5/25/2010.
		Phone Number	**312-544-7038**

Notice to Reader

The information in the material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions or as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current.