

SOY-BASED CHEMISTRY

Naturally Derived Alternatives
from Lubrizol Advanced
Materials, Inc.

Formulate With Confidence™

Lubrizol

SOY-BASED CHEMISTRY

Naturally Derived Alternatives from Lubrizol Advanced Materials, Inc.

Soy-based chemistries offer high-quality, alternative surfactants for the personal care products in your product line with natural or naturally derived claims. Our high-performance solutions meet or exceed conventional coconut- or petrochemical-derived chemistries in several areas, including: gentle emollient softness, solubility of costly fragrances, foam stabilization, viscosity building, soothing mildness and silky texture.



Our family of naturally derived, soy-based chemistries includes soy-based surfactants and PEG-glyceryl esters that can be used as amide replacements, as well as unique blends, for use in formulating: body and shower oils or gels, cationic creams or lotions, conditioners, cream rinses, facial cleaners, liquid hand soaps, mousses, setting gels and shampoos.

FORMULATING WITH SOY-BASED PRODUCTS

Like all Lubrizol chemistries, our line of soy-based products can be customized to meet your specific formulation requirements. Whether you're developing a high-end all-natural product enhanced with elegant premium features such as pearlescence, or simply looking for a higher quality alternative oil base to enhance an existing line of products, you can count on Lubrizol to deliver personal care chemistry with a personal touch.

TYPICAL PROPERTIES OF SOY-BASED PRODUCTS

Trade Name	Color, VCS	% Total Solids	Odor	Flashpoint, °F
Chemonic™ SI-63 Surfactant	2	100	Vegetable Oil	>200
Chemonic™ SI-6875 Surfactant	2	75	Vegetable Oil	>200
Chemonic™ SI-7 Surfactant	1+	100	Mild Vegetable Oil	>200
Potassium Soyate	4	28	Vegetable Oil	>200
Chemobetaine™ S Surfactant	2	36	Slight Ethanol	102
Chemoxide™ SO Surfactant	1+	24	Slight Ethanol	138
Chemobetaine™ S-FA Surfactant	2	36	Slight Ethanol	100
Quatrex™ S Surfactant	2	26	Mild and Sweet	153

NON AEROSOL SHAVING CREAM

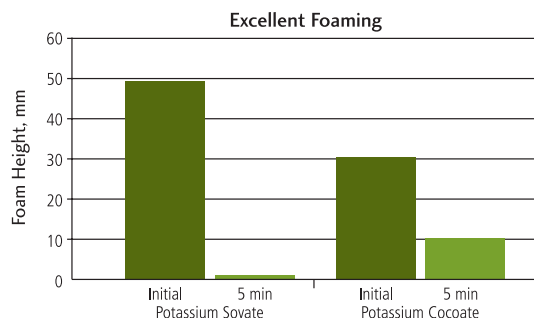
INCI Name (Trade Name)	Weight %
PART A	
1. Water, soft	30.15
2. Sodium Laureth Sulfate (and) Sodium Laureth-8 Sulfate (and) Magnesium Laureth Sulfate (and) Magnesium Laureth-8 Sulfate (and) Sodium Oleth Sulfate (and) Magnesium Oleth Sulfate (Sulfochem™ ASV-K Surfactant Blend, Lubrizol Advanced Materials, Inc.)	33.02
3. Soyamidopropylamine Oxide (Chemoxide™ SO Surfactant, Lubrizol Materials, Inc.)	18.87
4. Propylene Glycol	2.83
5. PEG-7 Glyceryl Soyate (Chemonic™ SI-7 Surfactant, Lubrizol Advanced Materials, Inc.)	0.94
6. Potassium Hydroxide	0.75
7. Potassium Soyate	3.96
PART B	
8. Stearic Acid	9.43
PART C	
9. Quaternium-15, (Dowicil® 200, The Dow Chemical Company)	0.05

Formulating Procedure

1. Heat all ingredients in PART A to 90°C.
2. Heat Stearic Acid separately to 90°C. Then add to PART A and mix at 90°C for 30 minutes.
3. Add Dowicil® 200 to PART A and B. Cool to 45°C while mixing. When temperature reaches 45°C, turn off mixing. Package while mixture is warm.

RICH LUXURIOUS FOAM AND SILKY SOFTNESS

When used in typical formulations, potassium soyate exhibits rich, luxurious foaming, followed by a silky softness that is neither dry nor oily, making it an ideal, naturally derived alternative for premium liquid hand soaps, facial cleansers and shampoos.



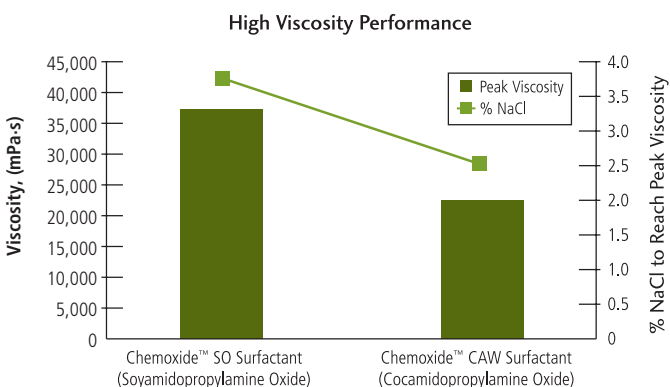
SOY-BASED CHEMISTRY SELECTION GUIDE

Trade Name INCI Name	Surfactant Use		Characteristics in Formulation				Special Characteristics
	Primary	Secondary	Feel	Foam*	Viscosity*	Fragrance Solubilizer*	
Chemonic™ SI-63 Surfactant PEG-30 Glyceryl Soyate		■	Soft			S	Mild cleanser
Chemonic™ SI-6875 Surfactant PEG-80 Glyceryl Soyate		■	Soft			S	Mild cleanser
Chemonic™ SI-7 Surfactant PEG-7 Glyceryl Soyate		■	Soft	S	S	E	Amide replacement
Potassium Soyate Potassium Soyate	■	■	Soft	S			Flash foaming superior potassium cocoate
Chembetaine™ S Surfactant Soyamidopropyl Betaine		■	Soapy	S	S		Foaming quality similar to natural soaps
Chemoxide™ SO Surfactant Soyamidopropylamine Oxide		■	Soft	E	E		Foam booster for low pH formulations, improved hard-water performance
Chembetaine™ S-FA Surfactant Soyamidopropyl Betaine		■	Soapy	S	S		Foaming quality similar to natural soaps, low free amine
Quatrex™ S Surfactant Soyamidopropalkonium Chloride	■	■	Soft				Compatible with anionics, excellent substantivity, conditioning

Key: E=Excellent, S=Superior

EXCEPTIONAL VISCOSITY PERFORMANCE

When used as an amide replacement, soy-based Chemoxide™ SO surfactant exhibits exceptional viscosity, making it an ideal naturally derived alternative for quality bath and shower products.



Test Formulation

Ingredient	%TS
SLES (2 mole)	10.5
Cocamidopropyl Betaine	2.8
Amine Oxide	2.0
Water	q.s. to 100

BETTER SCIENCE

For nearly four decades, Lubrizol has been developing and distributing the highest quality surfactants to the personal care industry. Customer-responsive services, from laboratory and technical consultation, to quality manufacturing and on-time product delivery, remain the hallmark of our organization. Our enriched capabilities extend to worldwide distribution and support, and encompass sophisticated new chemistries for enhancing existing products and developing new ones. Personal care solutions under development include: emulsifiers for sun care products, sulfates for mild personal care products, surfactants for infant care products, and specialty emulsifiers for creams and lotions.

With flexible manufacturing facilities and global warehousing capabilities, we are ideally positioned to respond quickly to your ingredient needs. For personal care chemistry delivered with a personal touch please contact your sales representative.



For product details, more information, samples and starting formulations visit www.lubrizol.com/personalcare

Formulate With Confidence™

North America

Lubrizol Advanced Materials, Inc.
9911 Brecksville Road
Cleveland, OH 44141-3247
TEL: 216.447.5000
TEL: 800.379.5389
FAX: 216.447.5250

Mexico

Lubrizol de Mexico Comercial S. de. R.L. de C.V.
Montes Urales #215
Col. Lomas de Chapultepec
Deleg. Miguel Hidalgo
México, D.F. c.p. 11000
TEL: 52.55.3067.0860
FAX: 52.55.5870.8956

Brazil

Lubrizol do Brasil Aditivos, Ltda.
Av. Fagundes Filho
134 - Cj. 101, 10th Floor
Edifício Victoria Office Center
São Judas, 04304-010 São Paulo
TEL: 55.11.4082.1330
FAX: 55.11.4082.1345

Europe

Lubrizol Advanced Materials Europe BVBA
Chaussée de Wavre, 1945
B-1160 Brussels,
Belgium
TEL: 32.2.678.19.11
FAX: 32.(0)2.678.1990

Asia Pacific

Lubrizol Specialty Chemicals (Shanghai) Co., Limited
10F, Park Centre International,
No. 1088 Fang Dian Road,
Shanghai 201204, PR China
TEL: 86.21.3866.0366
FAX: 86.21.5887.6977

India

Lubrizol Advanced Materials India Private Limited
Application & Business Center, 6th & 7th Floor
Jaswanti Landmark, Mehra Industrial Estate
LBS Marg, Vikhroli (W)
Mumbai 400079 India
TEL: 91.22.6602.7800
FAX: 91.22.6602.7888

www.lubrizol.com/personalcare



The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for a particular application or the results to be obtained herefrom. Lubrizol Advanced Materials, Inc. ("Lubrizol") cannot guarantee how any products associated with this information will perform in combination with other substances or in your process as the "user". Often, the information is based on laboratory work with small-scale equipment. Due to variations in methods, conditions and equipment used commercially in processing materials, the information does not necessarily indicate end product performance or reproducibility. As such, no warranties or guarantees are made as to the suitability of the information or products referenced hereunder for any applications disclosed to Lubrizol. Full scale testing and end product performance are the responsibility of the user. Further, any formulations presented hereunder should be used only as a suggested starting point. Lubrizol shall not be liable and the user assumes all risk and responsibility for, any use or handling of any material beyond Lubrizol's direct control. THE SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. **Nothing contained herein is to be considered as a permission, recommendation, or as an inducement to practice any patented invention without permission of the patent owner.** © Copyright 2012 The Lubrizol Corporation.

Chembetaine™, Chemonix™, Chemoxide™, Quatrex™ and Sulfochem™ are trademarks of The Lubrizol Corporation. Dowicil® is registered trademark of The Dow Chemical Company.

SURF-0003 2012121K