



Leadership. Service. Flexibility. Success. **We're going further.**



Product Catalog



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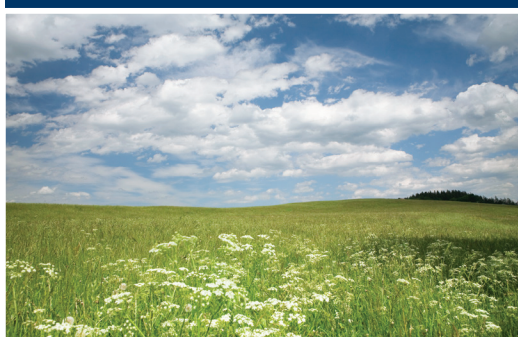
Charting Your Course with Innovative Chemical Solutions

Pilot's tailored solutions have spanned the globe for more than 50 years. A commitment to unique chemical processes and efficient manufacturing is our hallmark. Pilot's industry insight allows us to create surfactants designed to maximize your opportunities in new product development.

With strategically located facilities, we provide customized manufacturing solutions, and our expert team of technical specialists gives you rapid access to knowledgeable and reliable assistance at all stages of production. In addition, Pilot's well-established distributor network has built a record of consistent, on-time delivery.

Time after time, our custom programs succeed at delivering high yields. Pilot's leading-edge approach, personalized to each customer's needs, helps you achieve success.

We are a dynamic, market-focused and environmentally conscious company, offering the comprehensive chemical dexterity you expect from an industry leader. Whether you're producing detergents, personal care products, synthetic rubber, lubricants or other products, you can depend on Pilot to help lead you to success.



Pilot's unique industry insight allows us to create surfactants designed to maximize your opportunities in new product development.

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You can rely on Pilot for the highest quality chemistries in the industry, coupled with an unwavering commitment to the environment.



Personal Care

At Pilot, our wide variety of anionic, cationic, amphoteric and nonionic surfactant chemistries deliver luxurious foam, mildness and superior cleansing characteristics in shampoo, body wash, bar soap, hand soap, lotion, dental, pet care and skin care applications. These low-color, high-purity performance products help you create the best personal care products.

Personal Care Cleansers

Alkyl Ether Sulfates				
Calfoam® ammonium and sodium laureth sulfates are biodegradable anionic surfactants that have great cleansing properties with water hardness tolerance. They are excellent foamers with high flash foam and high viscosity response using amides, betaines and salts.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Calfoam® EA-303	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/26 %	<ul style="list-style-type: none"> Ammonium laureth sulfates should be used with formulations having a pH of 7.0 or below. Calfoam® EA-603 contains ethanol as a solvent. Calfoam® EA-703 offers cost savings over lower active products, but requires special handling and storage capabilities. Sodium laureth sulfates are compatible with high pH formulations. Higher moles of EO may increase skin mildness and flash foaming properties. Calfoam® ES-302HS has high viscosity. Calfoam® ES-603 contains ethanol as a solvent. Calfoam® ES-702, ES-702LD and ES-703 offer cost savings over lower active products, but require special handling and storage capabilities. Calfoam® ES-302LD and ES-702LD are specially processed to achieve extremely low dioxane levels. Calfoam® ES-562 is a high active product with the ease of handling of a low active product and does not contain alcohol. 	Shampoos, personal and pet cleansers, liquid hand soaps, baby wash, bubble bath, facial cleansers
Calfoam® EA-603	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/60%		
Calfoam® EA-703	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/70%		
Calfoam® ES-301	Sodium Laureth Sulfate (1 Mole EO)	Liquid/26%		
Calfoam® ES-302	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%		
Calfoam® ES-302HS	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%		
Calfoam® ES-302LD	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%		
Calfoam® ES-303	Sodium Laureth Sulfate (3 Mole EO)	Liquid/28%		
Calfoam® ES-562	Sodium Laureth Sulfate	Liquid/55%		
Calfoam® ES-702	Sodium Laureth Sulfate (2 Mole EO)	Liquid/70%		
Calfoam® ES-702LD	Sodium Laureth Sulfate (2 Mole EO)	Liquid/70%		
Calfoam® ES-703	Sodium Laureth Sulfate (3 Mole EO)	Liquid/70%		

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Personal Care



Personal Care Cleansers

Alkyl Sulfates				
Calfoam® lauryl sulfates are biodegradable anionic surfactants derived from renewable vegetable resources. They have excellent cleansing and foaming properties. They produce creamy lather; copious high flash foam; soft and silky after-feel properties; and provide excellent viscosity response with amides, betaines and salts.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Calfoam® ALS-30	Ammonium Lauryl Sulfate	Liquid/30%	<ul style="list-style-type: none"> Calfoam® ALS-30 should be used with formulations having a pH of 7.0 or below. Calfoam® SLS-30 and TLS-40 are compatible with lower and high pH formulations. Calfoam® TLS-40 offers higher activity, increased mildness and clarity at lower temperatures. Lower viscosity and foam responses with amides, betaines and salts, compared to SLS and ALS. 	Shampoos, personal and pet cleansers, liquid hand soaps
Calfoam® SLS-30	Sodium Lauryl Sulfate	Liquid/30%		
Calfoam® TLS-40	TEA Lauryl Sulfate	Liquid/40%		

Alkanolamides				
Pilot's alkanolamides are biodegradable, naturally derived, 100% active 1:1 super amides which provide foam boosting, foam stabilization and viscosity building properties in personal care products. They also offer multiple lubrication and emulsification characteristics.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Calamide® C	Cocamide DEA	Liquid/100%	Calamide® C is a clear amide used for viscosity building and foam stabilization.	Shampoos, personal and pet cleansers, liquid hand soaps, baby wash, bubble bath, facial cleansers"
Calamide® F	Modified Oleamide DEA	Liquid/100%	Calamide® F provides maximum viscosity performance in personal care formulations.	
Calamide® O	Cocamide DEA, Oleamide DEA Cocamide MEA	Liquid/100%	Calamide® O provides outstanding viscosity-building properties	
Calamide® MC	Cocamide MEA	Flake/100%	Calamide® MC is an amide with some emollient and lubrication characteristics. Requires heat to bring product to a liquid state.	
Masamide® R-4	PEG-4 Rapeseedamide	Liquid/90%	A unique thickening, foam boosting and stabilizing, and solubilizing agent, free of diethanolamine and nitrosamine, and high biodegradability and low aquatic toxicity	

Personal Care Cleansers

Performance Blends				
CalBlend® products are pre-formulated performance blends. Simply mix with water to the preferred active level, then add preservative, fragrance and dye to obtain a finished product ready for packaging. CalBlend® products offer formulators convenience and reduction of production errors and inventory.				
Product	INCI Name	Physical Form/Solids	Features/Benefits	Application
CalBlend® CLEAR	Sodium Laureth Sulfate, Cocamidopropyl Betaine, Cocamide DEA	Liquid/35%	CalBlend® CLEAR is a clear, high-foaming performance blend with good foam stability, excellent lather, high flash foam and great cleansing properties. All surfactants in CalBlend® CLEAR are biodegradable.	General hand soaps for pump and foam dispensers, body wash, and pet care products
CalBlend® ECO-1	Sodium Lauryl Sulfate, Sodium Laureth Sulfate, Cocamide MEA, Cocamidopropyl Betaine	Liquid/35%	CalBlend® ECO-1 is an environmentally and economically friendly performance blend that is biodegradable. Offers excellent cleansing, viscosity, flash foam, luxurious lather and skin mildness characteristics.	Shampoos, body wash, pet care products and hand soaps
CalBlend® DF	Sodium Laureth Sulfate, Sodium Lauryl Sulfate, Cocamidopropyl Betaine, Cocamide MIPA	Liquid/33%	DEA free blend that produces formulations which easily build viscosity levels, while yielding premium instant flash foam. CalBlend® DF is environmentally friendly, VOC-free, and solvent-free. Offers deep cleansing and leaves a silky afterfeel.	Shampoo, body wash, liquid hand soap, and pet shampoo
CalBlend® MILD	Sodium Laureth Sulfate, PEG-80 Sorbitan Laurate, Lauramidopropyl Betaine, PEG-150 Distearate	Liquid/38%	Ultra-mild optimized blend of gentle foaming and cleansing agents with excellent viscosity characteristics, low eye irritation, contains no solvents, is naturally derived, DEA-free, and VOC-free.	Baby shampoo, baby bath, puppy shampoo, ultra-mild personal and pet care applications
CalBlend® SF	Sodium C14-16 Olefin Sulfonate, Cocamidopropyl Betaine, Cocamide MIPA	Liquid/40%	Sulfate-Free, Dioxane-Free performance blend that offers excellent viscosity building while producing a creamy lather with a soft after feel, and is DEA-Free.	Shampoo, body wash, liquid hand soap, and pet shampoo
CalBlend® PEARL	Sodium Laureth Sulfate, Cocamidopropyl Betaine, Cocamide DEA, EGMS	Liquid/36%	CalBlend® PEARL is a ready-to-use pearlescent, high-foaming performance blend with good foam stability, excellent lather, flash foam and great cleansing properties. All surfactants in CalBlend® PEARL are biodegradable.	Pearlescent body wash, shampoos, and hand soaps
Masamide® REP	Surfactant Blend	Liquid/36%	High foaming thickener with excellent wetting, detergency, and foaming characteristics. Displays great solubility and stability in alkaline and high electrolyte systems and is 1,4 Dioxane Free. This multifunctional blend can be used as a stand-alone surfactant or with amphoteric, nonionic, cationic, and anionic surfactants.	Body Wash, Shampoo, Facial Cleansers, Hand Soap

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Personal Care



Personal Care Cleansers

Sulfonates				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Calsoft® sulfonates produce economical, sulfate-free personal care formulations with excellent cleansing, high foam volume, great flash foam and nice viscosity characteristics. They are fully compatible with anionic, nonionic and amphoteric surfactants.				
Calsoft® AOS-40	Sodium C14-16 Olefin Sulfonate	Liquid/40%	Olefin sulfonates produce sulfate-free and economical personal care formulas with excellent cleansing, foam volume, flash foam and viscosity characteristics over a broad pH range.	Shampoos, hand soaps, personal and pet cleansers
Calsoft® T-60	Triethanolamine Dodecylbenzene Sulfonate	Liquid/60%	Triethanolamine alkyl benzene sulfonates provide a high surfactant activity with excellent cleansing properties. Great solubilizer for perfumes.	Personal and pet care shampoos and cleansers

Specialty Products				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Pilot's specialty products offer excellent mildness, lather, foam stability and viscosity-building characteristics in numerous personal care and sulfate-free formulations. They are biodegradable and derived from natural vegetable resources.				
Calinate® LE	Disodium Laureth Sulfosuccinate	Liquid/40%	Calinate® LE is a cleansing agent with exceptional mildness and creamy lather characteristics, that will not remove the essential oils from the hair and skin. Produces sulfate-free formulations with good foam properties and good viscosity response to amides, betaines and salts. Biodegradable and derived from renewable vegetable resources.	Bubble bath, facial cleansers, syndet bars, sulfate-free products, baby wash, shampoos, body wash
Macat® AEC-126	Laureth-6 Carboxylic Acid	Liquid/90%	Recommended for mildness, efficient foaming, wetting and cleansing. Used in high foaming anionic systems for mildness and oil solubilization.	Shampoos, 2-in-1 conditioning shampoos, and hand soaps
Masoteric® 160C-30	Sodium Lauriminodipropionate	Liquid/30%	A salt-free, multi-functional amphoteric surfactant characterized by hydrolytic stability and its ability to couple nonionic surfactants into strong electrolyte solutions along with exceptional foaming, detergency, solubilizing and emulsification properties.	Waterless hand and cosmetic skin cleaners, conditioning shampoos, aerosol shave creams and as an emulsifier in creams and lotions

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Personal Care Cleansers

Amine Oxides				
Pilot offers a wide range of naturally derived Amines that produce a mild, creamy lather, and impart conditioning for a soft after feel while providing excellent foam boosting and stabilizing characteristics.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Macat® AO-14	Myristamine Oxide	Liquid/30%	A naturally plant derived myristyl (C14) dimethylamine oxide in water that provides viscosity control, and is an outstanding foam booster.	Creams, lotions, conditioners, and shampoos
Macat® BD	Behenamidopropyl Dimethylamine	Pastille/100%	Naturally derived Behenamidopropyl Dimethylamine, offering superior conditioning performance and detangling ability, without causing build up on hair	Creams, lotions, conditioners, and rinses
Macat® AO-16	Palmitamine Oxide	Liquid/30%	A naturally plant derived cetyl (C16) dimethylamine oxide in water that provides viscosity control, and is an outstanding foam booster.	Creams, lotions, conditioners, and shampoos
Macat® AO-18:1	Oleamine Oxide	Liquid-Gel/30%	A naturally plant derived oetyl (C18:1) dimethylamine oxide in water that provides viscosity control, and is an outstanding foam booster.	Creams, lotions, conditioners, and shampoos
Macat® MCO	C12-18 Alkyldimethyl Amine N-Oxides	Liquid/30%	Naturally plant derived myristyl/cetyl (C12-18) dimethylamine oxide in water that provides viscosity control, and is an outstanding foam booster.	Creams, lotions, conditioners, and shampoos
Macat® Ultra CDO	Cocamidopropylamine Oxide	Liquid/32%	Naturally plant derived coco amidopropyl dimethylamine oxide in water, and is based on the renewable vegetable lipid found in coconut oil.	Shampoo, conditioners, rinses
Macat® AO-12-2	Dihydroxyethyl Cocamine Oxide	Liquid/30%	Provides viscosity control, and is an outstanding foam booster and foam stabilizer. Biodegradable, solvent and VOC free.	Conditioners, creams, shampoo
Macat® AO-12	Lauryl Dimethylamine Oxide	Liquid/30%	Rheology modifier, emulsifier, and cleansing agent with excellent foam boosting/stabilizing characteristics	Shampoo, body wash, bubble bath, cleansers
Macat® Ultra LMDO	Lauramidopropylamine Oxide	Liquid/30%	Naturally plant derived lauryl (C12) amidopropyl dimethylamine oxide in water that provides effective wetting, outstanding foam boosting, grease cutting and thickening properties at low pH.	Shampoos, conditioners, rinses, and skin cleansers
Caloxamine® CPO	Cocamidopropylamine Oxide	Liquid/32%	Caloxamine® CPO is fully compatible with anionic, nonionic and amphoteric surfactants. Provides excellent foam stabilization, copious foam and foam-boosting properties. Offers good viscosity-building and emulsification characteristics. Stable in low and high pH formulations. Biodegradable and derived from renewable vegetable resources.	Bubble bath, facial cleansers, syndet bars, sulfate-free products, baby wash, shampoos, body wash
Caloxamine® LO	Lauramine Oxide	Liquid/30%	Caloxamine® LO is similar to Caloxamine® CPO in applications. It offers great cleansing and good emulsification and viscosity-building characteristics. Fully compatible with anionic, nonionic and amphoteric surfactants. Provides outstanding foam volume, good foam stabilization and foam-boosting properties. Stable in low and high pH formulations. Biodegradable and derived from renewable vegetable resources.	Bubble bath, facial cleansers, syndet bars, sulfate-free products, baby wash, shampoos, body wash

Personal Care



Personal Care Cleansers

Betaines/Sultaines Biodegradable viscosity building thickeners offering mild and naturally derived foam boosting, enhancing, and stabilizing characteristics built to enhance your Personal Care product line. Available in various alkyl chains and active levels. Compatible with a wide range of primary surfactants.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Macat® Ultra CG	Cocamidopropyl Betaine	Liquid/30%	Classic zwitterion surfactant, used as an exceptionally mild cleansing agent, skin conditioner, foam booster and thickener, and is based on the renewable vegetable lipid found in coconut oil, retaining the natural humectancy of glycerin.	Shampoo, conditioners, and rinses
Caltaine® C-35	Cocamidopropyl Betaine	Liquid/30%	Caltaine® C-35 is a mild, viscosity-building and foam-boosting agent typically used as a secondary surfactant in numerous personal care applications. Fully compatible with anionic, nonionic and amphoteric surfactants. Provides outstanding foam, foam stabilization and viscosity-building properties. Biodegradable and derived from renewable vegetable resources.	Bubble bath, facial cleansers, syndet bars, sulfate-free products, baby wash, shampoos, body wash
Macat® LB	Lauryl Betaine	Liquid/30%	Naturally plant derived lauryl (C12)dimethyl betaines in water that provides good detergency and coupling performance, with exceptional mildness to skin.	Shampoos, conditioners, rinses, and skin cleansers
Caltaine® L-35	Lauramidopropyl Betaine	Liquid/30%	Caltaine® L-35 is a mild, amphoteric surfactant with foam stabilizing, foam boosting and viscosity building properties. It offers an excellent lather profile and foam with soft, creamy feel. It is compatible with quats and can be used in 2 in 1 conditioning shampoos that utilize quats as hair conditioners. Biodegradable and derived from renewable vegetable resources.	Bubble bath, facial cleansers, syndet bars, sulfate-free products, baby wash, shampoos, body wash
Macat® LFB	Capryl/Capramidopropyl Betaine	Liquid/30%	Naturally plant derived caprylic/capric (C8/10) amidopropyl dimethyl glycine (betaine) in water that provides good detergency and coupling performance, with exceptional mildness to skin.	Shampoos, conditioners, rinses, and skin cleansers
Macat® CB	Cetyl Betaine	Liquid/34%	Naturally plant derived cetyl (C16)dimethyl betaines in water that provides good detergency and coupling performance, with exceptional mildness to skin.	Shampoos, conditioners, rinses, and skin cleansers
Macat® OB	Oleyl Betaine	Liquid/28%	Naturally derived oleyl (C18:1) dimethyl betaine in water that provides good detergency and coupling performance, with exceptional mildness to skin.	Shampoos, conditioners, and creams
Macat® CAP-HS	Cocamidopropyl Hydroxysultaine	Liquid/44%	Derived from coconut oil, commonly used as a replacement for cocamidopropyl betaine. Biodegradable, and contains no solvents or VOCs.	shampoo, body wash, and rinses

Preservatives & Preservative Alternatives

Preservatives & Preservative Alternatives				
Cost effective preservatives that are stable in a wide range of pH and temperature conditions. Pilot's Personal Care preservatives are compatible with surfactants, emulsifiers, and proteins.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Enhansys® CG-100	Caprylyl Glycol	Liquid/Solid 100%	Widely regarded as an effective emollient base, that functions as a conditioning ingredient, wetting agent, viscosity modifier and biological stabilizer. Stabilizing and pH control in place of traditional preservatives. Typically used in combination with phenoxyethanol and chloroxylenol.	Hair & skin conditioner and personal care formulations
Enhansys® M-100	Glycereth-2 Cocoate & Benzoic Acid	Liquid/100%	An effective moisturizer and thickener; benzoic acid is useful in pH control. Stabilizing and pH control in place of traditional preservatives. The efficacy of the benzoic acid is enhanced in the presence of proplene glycol	Shampoo, body wash, liquid hand soap, and other personal care formulations
Maguard® H-55	DMDM Hydantoin	Liquid/55%	Versatile and cost effective preservative that provides a high level of antimicrobial activity, inhibiting the growth of bacteria, yeasts and molds. Fully compatible with surfactants, emulsifiers and proteins, and stable over wide pH and temperature ranges for use as a cosmetic preservative.	Shampoos, conditioners, personal scrubbing and cleansing wipes, creams and lotions, sunscreens, raw materials and baby products

Emollient / Thickener

Specialty Products				
Pilot's specialty Personal Care emollients and thickeners produce mild, thick emulsions, while improving performance across a wide range of applications.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Masurf® Emulsifying Wax NF	Nonionic Emulsifier	Pastille/100%	Nonionic emulsifier based on mild ingredients that produces thick emulsions without the addition of stiffening waxes at concentrations as low as 5-10%, and shows excellent compatibility in anionic, cationic and nonionic systems, and produce stable emulsions at pH 3-13.	Creams, lotions, conditioner, pomades, sunscreen, ointments, and other emulsions
Macare® OP	Ethylhexyl Palmitate	Liquid/100%	A vegetable derived cosmetic ester designed to impart unique conditioning, emolliency, moisturization, emulsification, thickening, slip, gloss and superfatting in skin and hair care applications. Improves the rub-out, spreading, solubilization and skin feel properties for most cosmetics and pharmaceutical ingredients, as well as influence viscosity and dispersion characteristics.	Creams, lotions, makeup, baby care, sun care preparations, conditioners, deodorant sticks, bath oils, massage oil, hot pour products such as lipsticks, hair care and ethnic hair care.
Macare® G-2C, 7C, 17C	Glycereth Cocoate	Liquid/100%	Non-irritating, thickeners, foam booster/stabilizer, solubilizer, emulsifier, conditioner and emollient free of diethanolamine and nitrosamine.	Liquid soaps, lotions, body washes, shower gels, shampoos, facial cleansers, bubble baths and decorative cosmetics

Personal Care



Hair Styling Polymer

Specialty Products				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Specialty Hair Care polymer that imparts volume, soft feel, and dry combability, while providing flexible hold performance and curl retention with humidity resistance with no residue or build up.				
Macare® HP-230	Acrylates Copolymer	Liquid/100%	A low viscosity acrylic emulsion polymer when neutralized delivers a crystal-clear, practically colorless film forming solution that imparts volume, soft feel and dry combability. In addition it provides flexible hold performance and curl retention with humidity resistance and good wash-out removability for no residue or buildup. The emulsion form allows very low viscosities in high water formulations, with molecular weights optimized for humidity resistance, imparting a light, cushiony feel and an enhanced tactile experience in use.	Pump and aerosol mousse hair fixative and styling products, hair sprays, hair gels and styling mousse products.

Hair Conditioning Quats

Alkyl Trimethyl Ammonium Chlorides				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Pilot's naturally derived cationic surfactants are available in a wide range of active levels, both in flake and liquid form, and impart exceptional conditioning, emulsifying, and emollient properties.				
Maquat® CETAC-30%	Cetrimonium Chloride	Liquid/30%	Naturally plant derived cetyl trimethyl ammonium chloride in water with excellent substantive and anti-static properties that imparts exceptional conditioning, and detangling.	Conditioners, rinses, skin creams and lotions
Maquat® BTMC-25	Behentrimonium Chloride	Flake/25%	Naturally plant derived behenyl trimethyl ammonium chloride offered as a 25% active flake with cetearyl alcohol that imparts exceptional conditioning, wet-comb, detangling, softening, suspending and emulsification.	Conditioners, rinses, skin creams and lotions
Maquat® BTMC-85	Behentrimonium Chloride	Flake/80%	Naturally plant derived behenyl trimethyl ammonium chloride offered as an 80% active flake that imparts exceptional conditioning, wet-comb, detangling, softening, suspending and emulsification.	Conditioners, rinses, skin creams and lotions
Maquat® C-15	PEG-15 Cocomonium Chloride	Liquid/95%	Naturally plant derived cocoalkylmethyl PEG-15 ammonium chloride that provides anti-static, dispersing, hydrotrope, solubilizing and foaming properties	Conditioners and skin creams and lotions
Maquat® OAC	Olealkonium Chloride	Liquid/50%/80%	Naturally derived oleyl dimethylbenzyl ammonium chloride in water/ethanol that provides substantive conditioning, emulsifying and emollient properties.	Conditioners, mousses, styling gels, lotions and creams
Maquat® SC18	Stearalkonium Chloride	Paste/Flake/25%/85%	Naturally plant derived stearyl dimethylbenzyl ammonium chloride in water/ethanol that provides substantive conditioning, emulsifying and emollient properties.	Conditioners, mousses, styling gels, lotions and creams
Maquat® SC1632	Cetearyl Alcohol, PEG 40 Castor Oil, Stearalkonium Chloride	Flake/14%	Naturally plant derived stearalkonium chloride with cetearyl alcohol and PEG 40 Castor Oil that provides substantive conditioning, emulsifying and emollient properties.	Conditioners, Lotions and Creams

Conditioners

Specialty Products				
Unique conditioning agents, available in a variety of active levels, that impart detangling properties and build volume to enhance a wide range of Personal Care applications.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Maquat® PQ-100 Series	Polymethacrylamidopropyl Trimonium Chloride	Liquid/30%	An anti-static agent and film former that imparts conditioning, detangling, improved dry comb and fly away, build volume and sheen properties	Conditioners, relaxers, conditioning volumizing shampoos, skin lotions, and styling gels, mousses and sprays
Maquat® PQ-200 Series	Polyquaternium 37	Liquid/30%	An anti-static agent and film former that imparts conditioning, detangling, improved dry comb and fly away, build volume and sheen properties	Conditioners, relaxers, conditioning volumizing shampoos, skin lotions, and styling gels, mousses and sprays
Maquat® SOY-QSX	Soy Trimethoxysilylpropyltrimonium Chloride	Liquid/80%	A unique naturally derived "deep-conditioning" agent that provides a true "Heat Activated" hair conditioning treatment for deep, long lasting conditioning with outstanding curl retention.	Hair straighteners, hair curling and perm formulations, hair conditioners and pet and animal grooming products
Maquat® SL-5	Dihydroxypropyl PEG-5 Linoleammonium Chloride	Liquid/40%	Naturally plant derived dihydroxypropyl PEG-5 linoleammonium chloride in water that has unique substantive, lubricating, detangling, anti-static and anionic compatible foaming properties	2-in-1 shampoos, restorative conditioners, conditioning haircolor, creams and lotions
Mason® CS-445, CS-448	Didecyltrimonium Chloride	Liquid/50%/80%	Naturally plant derived didecyl dimethyl ammonium chloride for use as a cationic surfactant to impart antistatic and conditioning properties.	Conditioners, creams and lotions
Masurf® FS-1620	C4-18 Perfluoroalkylethyl Thiohydroxypropyltrimonium Chloride	Liquid/20%	An ultra efficient stabilizer, hair and skin conditioning agent with superior wetting activity and fast acting antimicrobial, self-preserving activity in nonionic and cationic formulations	Conditioners

Oil Resistant Specialty Products				
Pilot's oil resistant specialty products impart oil and grease resistance, while enhancing conditioning, wetting, and lubricity properties.				
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Masurf® FS-115, FS-130	DEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid/15%/30%	Fuoroaliphatic phosphate esters in an aqueous solution that impart oil, grease and sebum resistance, conditioning, wetting and lubricity properties	Make-up, mascara, shampoos and conditioners
Masurf® FS-130A	Ammonium-C6-16 Perfluoroalkylethyl Phosphate	Liquid/30%	Fuoroaliphatic phosphate esters in an aqueous solution that impart oil, grease and sebum resistance, conditioning, wetting and lubricity properties	Make-up, mascara, shampoos and conditioners

Personal Care
















Alcohol Foamers

Specialty Products		Specialty alcohol and polar organic solvent foamers recommended for a variety of Personal Care foaming applications.		
Product	INCI Name	Physical Form/Activity	Features/Benefits	Application
Masurf® AF-110DE	DEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid/7%	Optimized for foaming alcohol and polar organic solvents. MASURF AF-Series products are recommended for a range of foaming applications.	Alcohol-based hand sanitizers, shampoos, personal cleansers, make-up removers, sunscreen, insect repellent foams, analgesic rubs, antiperspirants, and pet grooming products
Masurf® AF-410TE	TEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid/7%	Optimized for foaming alcohol and polar organic solvents. MASURF AF-Series products are recommended for a range of foaming applications.	
Masurf® AF-110DI	Alcohol Foaming Surfactant	Liquid/7%	Optimized for foaming alcohol and polar organic solvents. MASURF AF-Series products are recommended for a range of foaming applications.	

Household and Institutional





Pilot's array of anionic, amphoteric and nonionic products span a wide range of applications, including laundry and dish washing detergents, all-purpose cleaners, degreasers, disinfectants, vehicle-cleaning compounds, heavy-duty commercial and industrial cleaners and sanitizers. You can count on us to deliver exactly what you need, when you need it.







Alkyl Ether Sulfates				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfoam® EA-303¹	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/26% 	<ul style="list-style-type: none"> Ammonium laureth sulfates should be used with formulations having a pH of 7.0 or below. 	Laundry, dish wash, car wash, other HI&I cleaners
Calfoam® EA-603¹	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/60% 	<ul style="list-style-type: none"> Higher moles of EO increases skin mildness and flash foaming properties. Calfoam® EA-603 and EA-682 contain ethanol solvent. 	
Calfoam® EA-682	Ammonium Decyl Ether Sulfate (2.2 Mole EO)	Liquid/60% 	<ul style="list-style-type: none"> Calfoam® EA-682 incorporates a shorter carbon chain which imparts excellent wetting and hydrotroping properties with a tolerance to high electrolytes and builder contents. 	
Calfoam® EA-703¹	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/70% 	<ul style="list-style-type: none"> Calfoam® EA-703 offers cost savings over lower active products, but requires special handling and storage capabilities. 	
Calfoam® ES-301^{1,2}	Sodium Laureth Sulfate (1 Mole EO)	Liquid/26% 	<ul style="list-style-type: none"> Can replace sulfonates in most HI&I formulations. Sodium laureth sulfates are compatible with high pH formulations. Higher moles of EO increase mildness and flash foaming properties. Calfoam® ES-302HS has high viscosity and ES-302HV has very high viscosity. Calfoam® ES-302LD and ES-702LD are specially processed to achieve extremely low dioxane levels. Calfoam® ES-603 contains an ethanol solvent. Calfoam® ES-702, ES-702LD and ES-703 offer cost savings over lower active products, but require special handling and storage capabilities. 	Laundry, dish wash, car wash, spot removal, other HI&I cleaners
Calfoam® ES-302^{1,2}	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27% 		
Calfoam® ES-302HS^{1,2}	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27% 		
Calfoam® ES-302HV^{1,2}	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27% 		
Calfoam® ES-302LD^{1,2}	Sodium Laureth Sulfate (3 Mole EO)	Liquid/28% 		
Calfoam® ES-303^{1,2}	Sodium Laureth Sulfate (3 Mole EO)	Liquid/28% 		
Calfoam® ES-603^{1,2}	Sodium Laureth Sulfate (3 Mole EO)	Liquid/60% 		
Calfoam® ES-702^{1,2}	Sodium Laureth Sulfate (2 Mole EO)	Liquid/70% 		
Calfoam® ES-702LD^{1,2}	Sodium Laureth Sulfate (3 Mole EO)	Liquid/70% 		
Calfoam® ES-703^{1,2}	Sodium Laureth Sulfate (3 Mole EO)	Liquid/70% 		

Notes: _____

Household and Institutional

















Alkyl Sulfates				
Calfoam® lauryl sulfates are biodegradable anionic surfactants derived from renewable vegetable resources. They offer excellent detergency, emulsification and foaming properties; produce copious foam, creamy lather, nice after-feel properties; and provide excellent viscosity response with amides, betaines and salts.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfoam® ALS-30 ^{1,2,4}	Ammonium Lauryl Sulfate	Liquid/30% 	Calfoam® ALS-30 should be used with formulations having a pH of 7.0 or below.	Laundry, hand dish wash, general purpose cleaner, industrial degreaser, pot and pan cleaner, car wash products, carpet cleaners
Calfoam® ALS-70 ^{1,2,4}	Ammonium Lauryl Sulfate	Liquid/70% 	Calfoam® ALS-70 offers cost savings over lower active products, but requires special handling and storage capabilities. It should be used with formulations having a pH of 7.0 or below.	
Calfoam® SLS-30 ^{1,2,3,4}	Sodium Lauryl Sulfate	Liquid/30% 	Calfoam® SLS-30 is an environmentally friendly and economical detergent that is compatible with high pH formulations.	
Calfoam® TLS-40 ²	TEA Lauryl Sulfate	Liquid/40% 	Calfoam® TLS-40 offers higher activity and increased clarity at lower temperatures and builds excellent viscosity and detergency properties with other surfactants.	

Alkanolamides				
Pilot's alkanolamides are easy to use, biodegradable and naturally-derived amides which provide foam boosting, foam stabilization and high foam volume properties in formulations, they also offer viscosity-building, lubrication and emulsification characteristics in HI&I formulations.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calamide® C ^{1,2}	Cocamide DEA	Liquid/100% 	Calamide® C is a clear 1:1 super amide which is widely used in numerous HI&I formulations for building and stabilization of viscosity and foam.	Manual dish wash, car wash, laundry, hard surface cleaner, all purpose cleaner, janitorial cleaner
Calamide® CW-100 ^{1,2}	Cocamide DEA	Liquid/100% 	Calamide® CW-100 is a 2:1 alkanolamide with a considerable amount of free alkali which increases solubility and detergency.	
Calamide® CWT	Modified Cocamide DEA	Liquid/100% 	Calamide® CWT is a modified 2:1 alkanolamide with higher solubility and detergency than Calamide CW-100.	
Calamide® F	Modified Oleamide DEA	Liquid/100% 	Calamide® F is a 1:1 super amide that provides maximum viscosity building performance in HI&I formulations.	
Calamide® MC	Cocamide MEA	Flake/100% 	Calamide® MC is a DEA-free 1:1 super amide with some emollient and lubrication characteristics. Requires heat to bring product to a liquid state.	
Calamide® O ¹	Cocamide DEA (and) Oleamide DEA	Liquid/100% 	Calamide® O is a 1:1 super amide that provides outstanding viscosity-building properties.	

This information is only for reference. Customers should verify the CFR clearances themselves.
¹CFR 21 approved; ²FDA approved for topicals; ³CFR 9 approved; ⁴CFR 40 approved



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Alpha Olefin Sulfonates				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calsoft® AOS-1245 ¹	Sodium C12 Alpha Olefin Sulfonate	Liquid/45% 	Calsoft® AOS-1245 offers excellent hard water and electrolyte stability, increased low temperature stability and some hydrotropic in HI&I formulations.	Car wash, hand soap, laundry, hard surface cleaner
Calsoft® AOS-40 ^{1,4}	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40% 	Calsoft® AOS-40 offers excellent detergency, wetting and foaming characteristics.	
Calsoft® AOS-FS ¹	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/43% 	Calsoft® AOS-FS is specially designed for improved low temperature handling properties and increased hydrotropic and detergency. Also has a great freeze-thaw profile.	
Alkyl Benzene Sulfonates and Sulfonic Acids				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calsoft® F-90 ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate	Flake/90% 	Calsoft® F-90 is a high active low color sodium alkyl benzene sulfonate flake used for wet and dry compounding of HI&I products. Perfect for ultra concentrated and high activity products.	Laundry, dish wash, all-purpose cleaner, hard surface cleaner, floor cleaner, dairy cleaner, wax stripper, degreaser
Calsoft® L-40 ^{1,2,4}	Sodium Linear Alkyl Benzene Sulfonate	Liquid/40% 	Calsoft® L-40 is a clear sulfonate that provides excellent detergency and high-foaming properties.	
Calsoft® L-60 ^{1,2,4}	Sodium Linear Alkyl Benzene Sulfonate	Paste/60% 	Calsoft® L-60 has excellent detergency and high-foaming properties. It contains a hydrotope to aid in clarity.	
Calsoft® L-40 Slurry ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/40% 	The Calsoft® slurry L-series sulfonates do not contain a hydrotrope, and therefore, have a lower clarity and higher viscosity.	
Calsoft® L-50 Slurry ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/50% 		
Calsoft® L-60 Slurry ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/60% 		
Calsoft® LAS-99 ¹	Linear Alkyl Benzene Sulfonic Acid	Liquid/97% 	Calsoft® LAS-99 is a high 2-phenyl product that provides copius and stable foam with outstanding detergency, wetting, rinsability and grease cutting ability. Perfect for ultra concentrated products.	
Calsoft® LPS-99 ¹	Linear Alkyl Benzene Sulfonic Acid	Liquid/97% 	Calsoft® LPS-99 is a low 2-phenyl product with slightly lower water solubility than LAS-99. Perfect for ultra concentrated products.	
Calimulse® PRS ¹	Isopropylamine Linear Alkyl Benzene Sulfonate	Liquid/93% 	Calimulse® PRS offers great detergency, emulsification and oily and particulate soil removal characteristics. It is soluble in water and soluble or dispersible in organic solvents like ethyl/isopropyl alcohol, and mineral spirits. Produces crystal clear d'limonene microemulsions in water and is an excellent o/w emulsifier. Perfect for dry cleaning, 2X/3X laundry, and d'limonene cleaner products.	
Calsoft® P-85 ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate	Flake/85% 	Calsoft® P-85 is a high active sodium alkyl benzene sulfonate flake with a lower solubility than Calsoft® F-90, perfect for HI&I applications requiring extended release detergency. Can be wet or dry compounded and has good anti-caking features.	
Calsoft® T-60	Triethanolamine Linear Alkyl Benzene Sulfonate	Liquid/60% 	Calsoft® T-60 is a clear, odorless sulfonate with good detergency and excellent foam properties in soft and hard water environments, very stable with low temperature applications.	

Household and Institutional



Specialty Sulfonates and Sulfonic Acids Pilot's specialty sulfonates and sulfonic acids produce unique and desirable characteristics in many HI&I formulations and applications. They are biodegradable, naturally derived and fully compatible with anionic, nonionic and amphoteric surfactants..

Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calsoft® OA-50¹	Oleic Sulfonic Acid	Liquid/50% 	Calsoft® OA-50 is a solubilizer and an effective wetting agent. Many bases can neutralize Calsoft® OA-50 to produce a surfactant with unique and desirable characteristics.	Food processing and cleaning, hard surface cleaner, laundry
Calsoft® OS-45S¹	Sodium Oleic Sulfonate	Liquid/45% 	Calsoft® OS-45S is a low-foaming, good solubilizer with excellent wetting characteristics.	

Diphenyl Oxide Disulfonates Diphenyl oxide disulfonates exhibit unsurpassed detergency, wetting, coupling and hydrotrope performance in HI&I formulations. They are extremely stable in harsh environments: acidic and alkaline, peroxide and bleach, high electrolytes and high temperatures. They are able to create efficient micro emulsions in high electrolytic systems and are ideal for formulations containing bleach and excessive builders. No halogenated solvents used.



Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfax® 10L-45¹	Sodium C10 Linear Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® 10L-45 offers low streaking properties and solubilizes phenolic germicides in disinfectant formulations. It provides excellent rinsability and good coupling performance.	Glass cleaner, bath cleaner, kitchen cleaner, concrete cleaner, industrial and institutional laundry, pot and pan cleaner, car wash, floor cleaner, hard surface cleaner, auto dish gel, ultra and compact laundry detergent
Calfax® 16L-35¹	Sodium C16 Linear Diphenyl Oxide Disulfonate	Liquid/35%	Calfax® 16L-35 offers outstanding detergency, emulsification characteristics and a very CMC.	
Calfax® DB-45¹	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® DB-45 produces high foam and extremely stable emulsions in many HI&I applications. It provides great rinsability.	

Diphenyl Oxide Disulfonic Acids Diphenyl oxide disulfonic acids offer the same outstanding surfactant characteristics as the neutralized diphenyl oxide disulfonates, however they have higher activity than the neutralized versions. They can be neutralized with a large variety of bases for unique HI&I applications. No halogenated solvents used.

Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfax® 6LA-70	C6 Linear Diphenyl Oxide Disulfonic Acid	Liquid/72%	Calfax® 6LA-70 utilizes a low carbon chain which presents excellent hydrotrope properties and rinses easily from surfaces.	Concentrated home laundry, glass cleaner, bath cleaner, kitchen cleaner, concrete cleaner, industrial and institutional laundry, pot and pan cleaner, car wash, floor cleaner, hard surface cleaner, auto dish gel
Calfax® DBA-70¹	C12 Branched Diphenyl Oxide Disulfonic Acid	Liquid/71%	Calfax® DBA-70, when neutralized with base of choice, produces high foam and extremely stable emulsions in many HI&I formulations.	

This information is only for reference. Customers should verify the CFR clearances themselves.
¹CFR 21 approved; ²FDA approved for topicals; ³CFR 9 approved; ⁴CFR 40 approved

Notes: _____










Hydrotropes				
Pilot's hydrotrope products offer consistent high-quality performance in many HI&I applications as a viscosity modifier, solubilizer, cloud point depressant and coupling agent.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Pilot® PTSA-65 ¹	p-Toluene Sulfonic Acid	Liquid/65%	Pilot® PTSA-65 is a high-quality clear toluene sulfonic acid with consistent performance.	Manual dish wash, car wash, hard surface cleaner, laundry, institutional and industrial cleaners
Pilot® SXS-40 ^{1,2,4}	Sodium Xylene Sulfonate	Liquid/40% 	Pilot® SXS-40 is a widely-used hydrotrope in many HI&I applications; effectively reducing viscosity, increasing solubility and improving clarity. It imparts dispersing and coupling properties in many formulations and will not impart any considerable detergency.	
Pilot® SXS-96 ^{1,2,4}	Sodium Xylene Sulfonate	Powder/95% 	Pilot® SXS-96 effectively reduces viscosity, increases solubility and improves clarity. It has especially good anti-caking properties for dry compounded formulations and will not impart any considerable detergency.	

Performance Concentrates				
Calsuds® products are economical concentrates that require minimal additional ingredients to produce a desired cleaner/detergent formulation with excellent detergency and emulsification properties. These concentrates serve as bases for a wide variety of industrial and institutional applications. Pilot can custom-manufacture performance concentrates to meet your specifications.				
Product	Chemical Name	Physical Form/Solids	Features/Benefits	Application
Calsuds® 81	Proprietary Concentrated Detergent Blend	Liquid/60%	Calsuds® 81 is a completely balanced detergent base with excellent detergency, great grease cutting, emulsification, wetting, foaming, flash foam and handling properties.	Heavy duty cleaner, pot and pan cleaner, laundry, hard surface cleaner, car wash, dish wash formulations, all purpose cleaner
Calsuds® A	Proprietary Concentrated Detergent Blend	Liquid/50%	Calsuds® A is an anionic and nonionic concentrate which can be used "as is" or compounded with other ingredients. Imparts excellent detergency, oily and particulate soil removal, grease cutting and foaming characteristics.	Manual dish wash, general purpose cleaners and car wash products, tub and tile cleaner
Calsuds® CD-6	Proprietary Modified Coconut Diethanolamide	Liquid/100%	Calsuds® CD-6 is a 100% active, high-alkalinity base with excellent emulsifying, viscosity-building and foam-stabilizing properties. It is ideal for high-viscosity and economical formulations.	Waterless hand cleaner, laundry detergent, manual dish wash, car wash, degreasers
Calsuds® CWC-2	Proprietary Detergent Blend	Liquid/43%	Calsuds® CWC-2 is a detergent blend with amphoteric, anionic and nonionic surfactants. It has excellent detergency and cleaning properties, is mild to the skin, and provides great foaming and viscosity response with salt.	Hand soap, manual dish wash, car wash, laundry, all-purpose cleaner, hard surface cleaner

Notes: _____

Household and Institutional



Performance Blends				
Product	Chemical Name	Physical Form/Solids	Features/Benefits	Application
CalBlend® CLEAR	Sodium Laureth Sulfate (and) Cocamidopropyl Betaine (and) Cocamide DEA	Liquid/35% 	CalBlend® CLEAR is a biodegradable clear high-foaming performance blend with good foam stability, lather, flash foam and detergency properties. All surfactants are derived from renewable vegetable resources.	General purpose cleaners, car wash, dish wash, fine fabric wash
CalBlend® ECO-1	Sodium Lauryl Sulfate (and) Sodium Laureth Sulfate (and) Cocamide MEA (and) Cocamidopropyl Betaine	Liquid/35% 	CalBlend® ECO-1 is an environmentally and economical friendly performance blend which is biodegradable, DEA free and derived from renewable vegetable resources. It offers excellent detergency, viscosity, flash foam, luxurious lather and skin mildness characteristics.	All-purpose cleaner, car wash, dish wash, laundry
CalBlend® ECO-40D	Sodium Lauryl Sulfate (and) Cocamide DEA (and) Cocamidopropyl Betaine	Liquid/40% 	CalBlend® ECO-40D is an environmentally and economical friendly performance blend that is biodegradable and derived from natural vegetable resources. Produces high cleansing formulations with dense and copious foam, instant flash foam and silky lather.	
CalBlend® FREE	Sodium C14-16 Olefin Sulfonate (and) Cocamidopropyl Betaine (and) Cocamide MEA (and) Disodium Cocoamphodiacetate	Liquid/45% 	CalBlend® FREE is a sulfate-free performance blend that is mild to the skin and offers great detergency, excellent viscosity and good foam building performance. It is biodegradable, dioxane free, DEA free, and VOC free. Produces high cleansing formulations with great instant flash foam and silky lather.	
Specialties for HI&I Products				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calinate® LE¹	Disodium Laureth Sulfosuccinate	Liquid/40% 	Calinate® LE is very mild and high-foaming anionic surfactant with excellent wetting characteristics. Produces sulfate-free formulations with good foam properties and viscosity response to amides, betaines and salts.	Laundry, mild dish wash, hard surface cleaner
Caloxamine® CPO	Cocamidopropylamine Oxide	Liquid/32% 	Caloxamine® CPO is fully compatible with anionic, nonionic and amphoteric surfactants. It is bleach and peroxide stable, compatible with biocidal quats and provides excellent foam stability, copious foam, foam-boosting and mildness properties. It also offers tremendous emulsification and great viscosity-building characteristics.	Kitchen and bath cleaners, laundry, car wash, manual dish wash, drain cleaners, carpet shampoo, peroxy cleaners
Caloxamine® LO²	Lauramine Oxide	Liquid/30% 	Caloxamine® LO is similar to Caloxamine® CPO in performance and applications. It provides outstanding foam volume, good foam stabilization, foam-boosting and grease cutting properties and offers great emulsification and viscosity-building characteristics.	Kitchen and bath cleaners, laundry, car wash, manual dish wash, drain cleaners, carpet shampoo, foaming bleach
Caltaine® C-35	Cocamidopropyl Betaine	Liquid/30% 	Caltaine® C-35 is a mild, viscosity-building and foam-boosting agent with great detergency properties. It is fully compatible with anionic, nonionic and amphoteric surfactants and provides outstanding foam intensity, foam stabilization and viscosity-building properties.	Laundry, manual dish wash, hard surface cleaner, fine fabric wash
Caltaine® L-35	Lauramidopropyl Betaine	Liquid/30% 	Caltaine® L-35 is a mild, amphoteric surfactant with foam stabilizing, foam boosting and viscosity building properties. It offers excellent detergency with oily and particulate soil removal properties. It is an excellent lime soap dispersant and is compatible with nonionic, anionic and cationic surfactants. Caltaine® L-35 is stable over a wide pH range.	Liquid laundry detergent, fine fabric wash, manual dish wash, tub and tile cleaner, all purpose cleaner, floor cleaner

Emulsion Polymerization

Pilot offers an extensive variety of diphenyl oxide disulfonates, sulfonic acids, sodium sulfonates, fluorosurfactants, alcohol sulfates and alcohol ether sulfates. Available in liquid, dry flake and paste form, and are used in paint, coating, rubber, latex, agriculture, adhesives and other polymer manufacturing applications.

Diphenyl Oxide Disulfonates and Disulfonic Acids Calfax® disulfonates and disulfonic acids are efficient anionic emulsifying and wetting agents with great electrolyte, temperature and hard water stability. Provides unsurpassed low critical micelle concentrations which aide in consistent particle size and distribution. Can be used as a sole surfactant or with other surfactants. Extremely stable in harsh environments; acidic and alkaline, peroxide, bleach, high electrolytes and high temperatures. Low foaming, excellent substrate and low migration, wetting paints, coatings, adhesives and printing inks. Good compatibility with phosphate ester and nonionic surfactants. High hardness and alkaline tolerance; suitable for use in concrete, cement and masonry applications. Disulfonic acids offer higher activity levels and neutralization compared to disulfonates of choice. Many bases can neutralize these acids to produce a surfactant for emulsion polymerization which feature unique and desirable characteristics. All Calfax products are VOC free, CFR 21 approved and do not contain any halogenated solvents. Perfect choice for APEO-free formulations.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfax® 6LA-70	C6 Linear Diphenyl Oxide Disulfonic Acid	Liquid/72%	Calfax® 6LA-70 utilizes a low carbon chain which presents excellent hydrotropic, coupling and rinsability properties. Can be neutralized with many different bases.	Easy-to-handle for emulsion polymerizations: <ul style="list-style-type: none"> • all acrylics • styrene-acrylics • styrene-butadiene • vinyl • chloprene • nitrile General adhesives, hot melt, pressure sensitive adhesives, films, paints, printing inks and aerosol
Calfax® 10L-45	Sodium C10 Linear Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® 10L-45 produces very stable emulsion polymerizations with low foam. Provides excellent stabilization of rubber latex. Great synergy with polychloroprene. It is a perfect chemistry for synthetic rubbers.	
Calfax® 16L-35	Sodium C16 Linear Diphenyl Oxide Disulfonate	Liquid/35%	Calfax® 16L-35 is a highly efficient surfactant which produces extremely low critical micelle concentrations. It provides good emulsification with great stability, and is efficient in producing small particle size latex.	
Calfax® DB-45	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® DB-45 produces consistent polymerizations with excellent mechanical, thermal and electrolytic stability. Has great interface absorption features and great particle size control. Calfax® DB-45 also offers excellent wetting properties which assist in prevention defects in coatings and paints.	
Calfax® DBA-40	C12 Branched Diphenyl Oxide Disulfonic Acid	Liquid/40%	Calfax® DBA-40 and Calfax® DBA-70 offer consistent emulsifications with outstanding mechanical and thermal stability, and can be neutralized with many different bases to produce low-foaming emulsifiers with unique characteristics.	
Calfax® DBA-70	C12 Branched Diphenyl Oxide Disulfonic Acid	Liquid/71%		
Alcohol and Ether Sulfates Alkyl and alkyl ether sulfates are anionic surfactants that are free of VOC's and halogenated solvents. They offer great consistency and predictable performance in a variety of emulsion polymerization applications. Perfect choice for APEO-free formulations.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calfoam® EA-303	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/26%	Calfoam® EA-303 is a naturally derived, vegetable based biodegradable efficient anionic surfactant with great particle size control and high stability characteristics for styrene, vinyl and acrylic emulsion polymerization. The 3 moles of ethylene oxide provides small particle sizes and aides in increased stability of an emulsion.	Styrene, vinyl and acrylic emulsions
Calimulse® SLS	Sodium Lauryl Sulfate	Liquid/30%	Calimulse® SLS is a naturally derived, vegetable based biodegradable linear anionic surfactant with good economical emulsification and wetting properties. Has excellent compatibility with nonionic surfactants and excellent performance in low and high pH applications.	

Emulsion Polymerization



Sulfonates				
Calimulse® and Calsoft® sulfonates are anionic surfactants that are free of VOC's and halogenated solvents. They offer great consistency and predictable performance in a variety of emulsion polymerization applications. Perfect choice for APEO-free formulations.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calimulse® AOS	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40%	Calimulse® AOS is a clear anionic surfactant with good economical emulsification and wetting properties. Readily biodegradable.	Styrene-Butadiene, vinyl acetate, nitrile and acrylic latex manufacture General adhesives, hot melt, pressure sensitive adhesives films, paints, coatings, printing inks and aerosols
Calimulse® EM-22	Sodium Branched Alkyl Benzene Sulfonate	Liquid/22%	Calimulse® EM-22 is an effective emulsifier which produces stable emulsions. It also has great wetting and handling properties.	
Calimulse® EM-96F	Sodium Branched Alkyl Benzene Sulfonate	Flake/96%	Calimulse® EM-96F is a high active and very pure branched anionic sulfonate non-caking flake with great wetting and emulsifying properties.	
Calimulse® L-22	Sodium Linear Alkyl Benzene Sulfonate	Liquid/22%	Calimulse® L-22 offers great emulsifying and wetting properties. Perfect as a primary or co-emulsifier. Readily biodegradable.	
Calimulse® L-30	Sodium Linear Alkyl Benzene Sulfonate	Liquid/30%	Calimulse® L-30 is a clear and homogeneous linear anionic surfactant with great handling and storage properties. Readily biodegradable.	
Calimulse® L-50	Sodium Linear Alkyl Benzene Sulfonate	Paste/50%	Calimulse® L-50 is a high active and viscous linear anionic surfactant. The higher viscosity of L-50 often requires special storage and handling. It does not contain a hydrotope. Readily biodegradable.	
Calimulse® PR	Isopropylamine Branched Alkyl Benzene Sulfonate	Liquid/90%	Calimulse® PR is a high active branched anionic surfactant with great stabilization characteristics. Great compatibility with other surfactants.	
Calimulse® PRS	Isopropylamine Linear Alkyl Benzene Sulfonate	Liquid/93%	Calimulse® PRS is a high active linear anionic surfactant with great stabilization and wetting characteristics. Great compatibility with other surfactants. Readily biodegradable.	
Calsoft® F-90	Sodium Linear Alkyl Benzene Sulfonate	Flake/90%	Calsoft® F-90 is a high active and very pure linear anionic sulfonate flake with great wetting and emulsifying properties. Readily biodegradable.	
Calsoft® OS-45S	Sodium Oleic Sulfonate	Liquid/45%	Calsoft® OS-45S is an emulsifier with low foam and excellent wetting characteristics. Biodegradable and derived from natural and renewable resources.	










Sulfonic Acids				
Calimulse® and Calsoft® sulfonic acids offer higher activity levels compared to sulfonates of choice. Many bases can neutralize these acids to produce a surfactant for emulsion polymerization which present unique and desirable characteristics. VOC free and do not contain any halogenated solvents. Perfect choice for APEO-free formulations.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calimulse® EM-95	Branched Dodecyl Benzene Sulfonic Acid	Liquid/95%	Calimulse® EM-95 is a high active branched anionic sulfonic acid with great stability and emulsifying properties. It has a low-sulfuric acid content for conversion to calcium salts.	Styrene, vinyl, acrylic and butadiene carboxylated latex emulsion polymerization
Calimulse® EM-99	Branched Dodecyl Benzene Sulfonic Acid	Liquid/97%	Calimulse® EM-99 is a high active branched anionic sulfonic acid with great stability and emulsifying properties.	
Calsoft® LAS-99	Linear Alkyl Benzene Sulfonic Acid	Liquid/97%	Calsoft® LAS-99 is a high active linear anionic sulfonic acid with good emulsifying properties. Readily biodegradable.	

Fluorosurfactants				
Masurf® Fluorosurfactants have anti-blocking properties, are effective in both aqueous and solvent-based systems and improve finishing performance for a smoother, higher gloss coating.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Masurf® FS-630 EB/ FS-630 DB	Fluoroaliphatic Sodium Sulfosuccinate Fluorosurfactant	Liquid/30%	Imparts exceptional wetting and leveling for penetrating cleaners/ strippers and uniform drying properties for non-streak cleaners. Superior wetting performance results in improved film uniformity.	Cleaning products, floor finishes, water-based coatings, and fiber finishes
Masurf® FS-2620	Fluoroaliphatic Sodium Sulfonate Fluorosurfactant	Liquid/20%	Imparts exceptional wetting and leveling for penetrating cleaners/ strippers and uniform drying properties for non-streak cleaners. Superior wetting performance results in improved film uniformity.	Cleaning products, floor finishes, water-based coatings, and fiber finishes
Masurf® FS-2800	Fluoroaliphatic Surfactant	Paste/Waxy Solid/100%	Stable in anionic and cationic systems, effective in high or low pH. Useful to extend open-time, acts as a coupling agent for fillers, imparts anti-soiling performance and allows wetting of low energy surfaces. Gives versatility of formulating products in both aqueous and solvent based systems.	Water-based latex paints, high performance polymer and non-aqueous resin systems
Masurf® FS-2900	Fluoroaliphatic Surfactant	Solid/100%		
Masurf® FS-2825	Fluoroaliphatic Surfactant	Liquid/25%		
Masurf® FS-2950	Fluoroaliphatic Surfactant	Liquid/50%		
Masurf® FS-3300	Fluoroaliphatic Phosphate Ester Fluorosurfactant	Solid/100%	Exceptional oil resistance, spreading and leveling properties, imparts a surface barrier to re-soiling, defoaming, effective anti-block in aqueous coatings, and extends open-time. Gives versatility of formulating products in both aqueous and solvent based systems.	Floor finishes and sealers, building materials, specialty cleaners, paints and coatings, water-based latex paints, oil field applications, personal care
Masurf® FS-3330A	Fluoroaliphatic Phosphate Ester Fluorosurfactant	Solid/30%		

Oil Field and Gas Well Products

Pilot offers a large range of products which find application in the oil field industry as additives for corrosion inhibition, drilling fluids, oil treatments, stimulating, cementing, and foaming. Pilot also has the capability to manufacture custom products for unique and special oil field, gas well and production application.



Oil Field and Gas Well Products				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Aristonic® Acids and Aristonate® Products	Alkyl Aryl Sulfonic Acids and Sulfonates	Liquid/50-90%	Aristonic® and Aristonate® products are consistent oil/water emulsifiers, corrosion inhibitors, demulsifiers and lubricity providers for drilling. Low, medium and high molecular weight products are available featuring highly desirable features in a variety of applications. They can easily replace natural sulfonates.	Well drilling and stimulation, water-based drilling mud systems, silt suspension, paraffin control, production, EOR projects
Calamide® Products	Alkanolamides	Liquid and Dry/100% 	Calamide® products are a foam booster, viscosity enhancer, lubricity agent, torque reducer and corrosion inhibitor. They also are an effective emulsification aid.	Well drilling and stimulation, torque reduction and corrosion inhibition
Calfax® Products	Linear/Branched Diphenyl Oxide Disulfonates and Disulfonic Acids	Liquid/35-70%	Calfax® products are great wetting agents and foamers used in high temperature applications. They offer great stability over a wide pH range and high tolerance to highly electrolytic systems.	Detergent and dispersing agent for well cleanout operations
Calfoam® EA-603	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/60% 	Calfoam® EA-603 is a foaming and wetting agent used in various hard/soft water environments and contains an ethanol solvent.	Drilling fluids, unloading gas wells, production foamer and foaming agent for pneumatic drilling fluids
Calfoam® EA-682	Ammonium Decyl Ether Sulfate (2.2 Mole EO)	Liquid/60% 	Calfoam® EA-682 is an excellent foaming and wetting agent in highly electrolytic solutions, and hard/soft water environments.	Foam drilling, foam fracturing, unloading gas wells and production
Calimulse® EM-99	Branched Dodecyl Benzene Sulfonic Acid	Liquid/97%	Calimulse® EM-99 is a high active intermediate to make various salts for demulsifiers and anti-sludge agents.	Anti-sludge agent for well stimulation, primary and secondary production
Calimulse® PR	Isopropylamine Branched Alkyl Benzene Sulfonate	Liquid/93%	Calimulse® PR is a consistent and high active branched emulsifier.	Paraffin control and demulsification for primary and secondary production
Calimulse® PRS	Isopropylamine Linear Alkyl Benzene Sulfonate	Liquid/93% 	Calimulse® PRS is a consistent and high active linear emulsifier.	Paraffin control and demulsification for primary and secondary production
Calsoft® AOS-1245	Sodium C12 Alpha Olefin Sulfonate	Liquid/45% 	Calsoft® AOS-1245 is a high flash foamer with excellent high temperature and electrolyte stability, has high hard/soft water tolerance.	Foam drilling and unloading gas wells
Calsoft® AOS-40	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40% 	Calsoft® AOS-40 is a foamer used in high temperature applications. It has extended stability and good flash-foaming characteristics within a wide pH range.	Foam drilling, foam fracturing and well stimulation
Calsoft® F-90	Sodium Linear Alkyl Benzene Sulfonate	Flake/90% 	Calsoft® F-90 is an easy-to-handle sulfonate flake with good anti-caking and wetting properties.	Cementing
Calsoft® LAS-99	Linear Alkyl Benzene Sulfonic Acid	Liquid/97% 	Calsoft® LAS-99 is a high active intermediate to make various salts for consistent and predictable demulsifiers. Can also function as a detergent, wetting agent and foaming agent.	Cleaning, lubricity, anti-sludge and penetration agent for well stimulation and production
Caltaine® C-35	Cocamidopropyl Betaine	Liquid/30% 	Caltaine® C-35 is a foaming agent, foam booster and foam stabilizer with consistent performance.	Foam drilling and unloading gas wells
Pilot® DABSA	Alkyl Aryl Sulfonic Acid	Liquid/80%	Pilot® DABSA is a high molecular weight intermediate used to make various salts for demulsifiers.	Primary and secondary production, emulsifier for crude



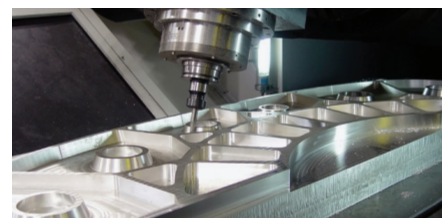
Metalworking and Lubricant Additives


At Pilot, our well-known, first-intent lubricant additives offer excellent corrosion inhibition and emulsification characteristics, with lower viscosities and improved handling features, than comparable natural sulfonates. The reason is our proprietary ice-cold sulfonation process. We manufacture the leading sulfonates for metalworking, corrosion inhibitor, emulsifier, demulsifier and lubrication applications.



Sulfonates and Sulfonic Acids		Pilot Chemical's sulfonates and sulfonic acids are manufactured utilizing custom tailored first-intent alkylates which offer consistent emulsification, demulsifying characteristics, corrosion inhibition performance and great handling properties that natural sulfonates cannot match.		
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Aristonic® Acids	Alkyl Aryl Sulfonic Acid	Liquid/85-90%	Aristonic® Acids are high active and very pure sulfonic acids which can be neutralized with many bases to create specialty sulfonates perfect for over basing to complex sulfonates.	Lubrication, metalworking and coating formulations
Aristonate® C-5000	Neutral Calcium Sulfonate (EW=515)	Liquid/50%	Aristonate® C-5000 is a high performance corrosion inhibitor and demulsifier. It has a typical total base number, TBN of 5mgKOH/g and features great water rejection characteristics for hydraulic fluids and greases.	
Aristonate® C-5020 (developmental)	Low Overbased Calcium Sulfonate (EW=515)	Liquid/50%	Aristonate® C-5020 is a high performance low overbased sulfonate that offers corrosion inhibition and demulsification. It has a typical strong base number of 20mgKOH/g and features great water rejection characteristics for hydraulic fluids and greases.	
Aristonate® S-4000	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	Aristonate® S-4000 is a very efficient and low foaming emulsifier for soluble oils. It easily forms microemulsions generating the basis for semi-synthetic fluids.	
Aristonate® S-4600	High Molecular Wt. Alkyl Aryl Sulfonate (MW=460)	Liquid/60%	Aristonate® S-4600 is a high efficiency emulsifier with enhanced corrosion inhibition and low foam profile. It is a great utility sulfonate for soluble oils and semi-synthetics, and is well-suited for paraffinic and naphthenic base stocks.	
Aristonate® S-5000	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=500)	Liquid/60%	Aristonate® S-5000 is a corrosion inhibition agent with a low foam profile and good emulsification properties. It is well suited for semi-synthetic.	
Aristonate® MME-60	Monoethanolamine Sulfonate (MW=470)	Liquid/60%	Aristonate® MME-60 is an emulsifier for industrial lubricants. It is particularly stable in the presence of boric acid amine corrosion inhibitors, used in soluble oils and semi-synthetics.	
Aristonate® H	High Molecular Wt. Alkyl Aryl Sulfonate (MW=470)	Liquid/60%	Aristonate® H is a corrosion inhibitor with good emulsification performance and has great iron and hard water tolerance.	

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Metalworking and Lubricant Additives



Sulfonates and Sulfonic Acids		Continued from previous page.		
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Aristonate® L	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	Aristonate® L is a high performance emulsifier for soluble oils.	Lubrication, metalworking and coating formulations
Aristonate® M	Medium Molecular Wt. Alkyl Aryl Sulfonate (MW=430)	Liquid/60%	Aristonate® M is a general utility and economical sulfonate that offers emulsification and corrosion protection.	
Aristonate® VH-2	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=520)	Liquid/60%	Aristonate® VH-2 is a strong corrosion inhibitor. It has good emulsification properties for soluble oils and semi-synthetics, used on paraffinic base stocks.	
Calfax® DB-45¹	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® DB-45 and Calfax® 16L-35 are specialty detergents that can increase the hard water tolerance of an emulsion without increasing foam tendencies. Offers excellent synergies with Aristonate® S-series products.	
Calfax® 16L-35¹	Sodium C16 Linear Diphenyl Oxide Disulfonate	Liquid/35%		
Calsoft® OS-45S¹	Sodium Oleic Sulfonate	Liquid/45% 	Calsoft® OS-45S is an emulsifier and wetting agent with defoaming and anti-foam characteristics. It imparts corrosion resistance in many formulations and is a good solubilizer and dispersant. Biodegradable and derived from natural and renewable resources.	








Specialty Additives				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calamide® F	Oleamide DEA	Liquid/100% 	Calamide® F is a co-emulsifier, corrosion inhibitor and lubricity agent in metal removal and metal forming fluids. Biodegradable and derived from natural and renewable resources.	Lubrication and metalworking formulations
Pilot® DABSA	Alkyl Aryl Sulfonic Acid	Liquid/80%	Pilot® DABSA is a high molecular weight sulfonic acid for neutralization to specialty sulfonates. Its acid form permits in situ neutralizations.	
Pilot® SXS-40^{1,2,4}	Sodium Xylene Sulfonate	Liquid/40% 	Pilot® SXS-40 is a great solubilizer, coupling agent, cloud point depressant and viscosity reducer. Biodegradable.	

*This information is only for reference. Customers should verify the CFR clearances themselves.
¹CFR 21 approved; ²FDA approved for topicals; ⁴CFR 40 approved*

Notes: _____

Industrial Applications

Pilot's products are used for foaming and flotation agents, stable emulsifiers, surface finishing, metal protection, various catalysts, dust suppression and air entrainment. Our unique chemistry solutions support an extensive list of industries from agriculture to metal processing. Many of Pilot's chemicals are CFR 21 and CFR 40 compliant and are available in liquid, dry flake and paste forms.

Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Aristonic® Acids and Aristonate® Products	Alkyl Aryl Sulfonic Acids and Sulfonates	Liquid/50-90%	Aristonic® and Aristonate® products are consistent oil/water emulsifiers, corrosion inhibitors, demulsifiers and lubricity providers for drilling. Low, medium and high molecular weight products are available featuring highly desirable features in a variety of applications. They can easily replace natural sulfonates.	Ore floatation, enhanced oil recovery, textile, corrosion preventative coating, dielectric fluids and heat transfer fluids, industrial dispersant, textile oils
Calamide® Products^{1,2}	Alkanolamides	Liquid and Dry/100% 	Calamide® products are a foam booster, viscosity enhancer, lubricity agent, torque reducer and corrosion inhibitor. They also are an effective emulsification aid.	Corrosion inhibitor, viscosity modifier and foam booster for numerous industrial applications
Calfax® 10L-45¹	Sodium C10 Linear Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® 10L-45 produces very stable emulsion polymerizations with low foam. Provides excellent stabilization of rubber. Great synergy with polychloroprene.	Agricultural, oil field, textile, adhesives, emulsion polymerization, glass and tile cleaner, laundry and concrete
Calfax® DB-45¹	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® DB-45 is a good wetting agent and foamer used in high temperature applications. It offers great stability over a wide pH range and high tolerance to highly electrolytic systems.	Agricultural, oil field, textile, adhesives, emulsion polymerization, glass and tile cleaner
Calfoam® EA-682	Ammonium Decyl Ether Sulfate (2.2 Mole EO)	Liquid/60% 	Calfoam® EA-682 is a foaming agent for highly electrolytic systems and hard/soft water environments.	Gypsum wall board, cement admixtures, fire fighting foams, oil field and gas field
Calfoam® ES-302^{1,2}	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27% 	Calfoam® ES-302 is a biodegradable foaming agent derived from renewable vegetable resources. It also presents great flash foamer properties with water hardness tolerance.	Industrial foaming agent and detergent
Calfoam® SLS-30^{1,2,3,4}	Sodium Lauryl Sulfate	Liquid/30% 	Calfoam® SLS-30 is a biodegradable foaming agent which is derived from renewable vegetable resources.	Specialty foaming and agricultural applications
Calimulse® EM-96F^{1,2,3,4}	Sodium Branched Alkyl Benzene Sulfonate	Flake/96%	Calimulse® EM-96F is a high active and very pure branched anionic sulfonate non-caking flake with great detergency, wetting and emulsifying properties.	Emulsion polymerization, mold coatings for glass and tires, anti-fungal agent for soap wrap and specialty cleaners
Calimulse® PR¹	Isopropylamine Branched Alkyl Benzene Sulfonate	Liquid/90%	Calimulse® PR is a high active branched emulsifier, wetting agent, penetrant and dispersant.	Agricultural, oil field, gas well and textile
Calimulse® PRS¹	Isopropylamine Linear Alkyl Benzene Sulfonate	Liquid/93% 	Calimulse® PRS is a high active linear surfactant with great degreasing, emulsification, wetting and detergent properties.	Fabric pre-spotter, hand cleaner, dry cleaning products and agricultural emulsions
Calsoft® AOS-1245¹	Sodium C12 Alpha Olefin Sulfonate	Liquid/45% 	Calimulse® AOS-1245 is a high flash foamer with great temperature and electrolyte stability. It has high hard/soft water tolerance.	Concrete, gypsum board, dust control, fire fighting foam, oil field and HI&I applications
Calsoft® AOS-40^{1,4}	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40% 	Calsoft® AOS-40 is a foaming agent with great flash foam properties within a wide pH range.	Concrete, gypsum board, oil field, dust control, fire fighting foam and agricultural foam marking applications, HI&I

Industrial Applications



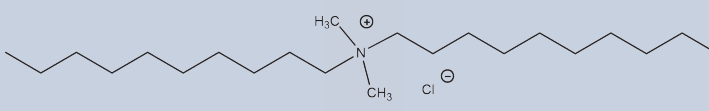
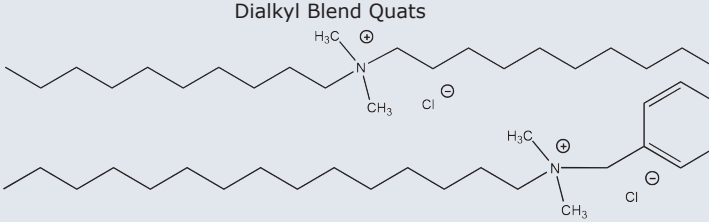
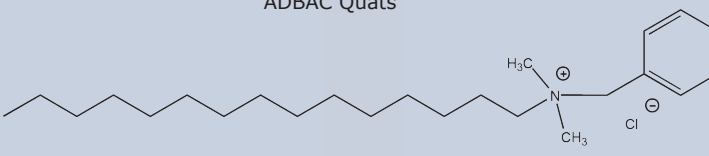
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calsoft® F-90 ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate	Flake/90% 	Calsoft® F-90 is an excellent wetting agent and detergent compound in acid and caustic applications. It has superior rinsing characteristics.	Cement admixture, dairy, sanitation, metal cleaning, ore flotation, metal pickling compounding, dust collection, textile scouring agent
Calsoft® L-40 ^{1,2,3,4}	Sodium Linear Alkyl Benzene Sulfonate	Liquid/40% 	Calsoft® L-40 is a clear foaming agent with excellent detergency, high foam, low viscosity and good handling properties.	Vinyl cleaner, concrete, gypsum board, dust control and fire fighting foam applications
Calsoft® LAS-99 ¹	Linear Alkyl Benzene Sulfonic Acid	Liquid/97% 	Calsoft® LAS-99 is an excellent high active foaming sulfonic acid which can be neutralized with numerous bases for a variety of foaming products with excellent detergency.	Water treatment, food processing and cleaning, laundry, metal treating and cleaning, dust control, textile, paint stripper and cement admixture
Calsoft® OA-50 ¹	Oleic Sulfonic Acid	Liquid/50% 	Calsoft® OA-50 is great solubilizer and effective wetting agent. Many bases can neutralize Calsoft® OA-50 to produce a surfactant with unique and desirable characteristics.	Food processing cleaner, industrial cleanser, emulsion polymerization and textile
Calsoft® OS-45S ¹	Sodium Oleic Sulfonate	Liquid/45% 	Calsoft® OS-45S is a great emulsifier with low foam and excellent wetting characteristics.	Food processing cleaner, industrial cleanser, emulsion polymerization, ore leaching, crystal growth modifier, wastewater flotation, textile
Pilot® D-300	4 Sulfophthalic Acid	Liquid/50%	Pilot® D-300 is the primary component of the preferred electrolyte for the production of hard anodic oxide coatings on aluminum alloys which are highly abrasion resistant and feature many colors. Pilot® D-300 efficiently produces decorative and protective oxide coatings under a wide range of practical operating conditions and cost.	Electrolytic bath additive for the Duranodic aluminum anodizing process, industrial catalyst, corrosion inhibitor and chemical intermediate
Pilot® EM-95 ^{1,4}	Branched Dodecyl Benzene Sulfonic Acid	Liquid/95%	Pilot® EM-95 is a high active branched anionic sulfonic acid with great stabilization, emulsifying and wetting properties. Low-sulfuric acid content.	Oil field, agriculture, textile and detergent applications
Pilot® EM-99 ^{1,4}	Branched Dodecyl Benzene Sulfonic Acid	Liquid/97%	Pilot® EM-99 is a high active branched anionic sulfonic acid with great stabilization, emulsifying, wetting and detergency properties.	Oil field, agriculture, textile and detergent applications
Pilot® PTSA-65 ¹	p-Toluene Sulfonic Acid	Liquid/65%	Pilot® PTSA-65 is a high-quality clear toluene sulfonic acid with consistent performance.	Catalyst for glacial acrylic acid, thermosetting resins, foundry applications and alkylation processes. Specialty textile chemical
Pilot® PTSA-99 ¹	Anhydrous p-Toluene Sulfonic Acid	Paste-Crystals/98%	Pilot® PTSA-99 is an anhydrous, high quality toluene sulfonic acid with a high para isomer content and consistent performance.	Catalyst for thermosetting resins, alkylation processes and polymerization. Intermediate in dye manufacturing and pharmaceutical chemical production

This information is only for reference. Customers should verify the CFR clearances themselves.
¹CFR 21 approved; ²FDA approved for topicals; ³CFR 9 approved; ⁴CFR 40 approved

Notes: _____

Maquat® EPA Registered Products

Pilot Chemical Company produces the highest quality and broadest range of EPA Registered Biocidal Quaternaries in the industry and continues to lead the industry with consistent high quality, product performance, and attentive customer service and support.

Maquat Grade	Structure/Description	Cross Reference		
		Stepan	Lonza	
		EPA #1839	EPA#6836	EPA# 47371
<p>Dialkyl Quats</p> 		<p>Dialkyl (Dialkyl Dimethyl Ammonium Chloride) Quats are recognized as the most efficacious defined by outstanding germicidal performance, unusual tolerance for anionic surfactants, protein loads and hard water, and are FDA cleared for use as "indirect food additives" in sanitizing solutions for food contact surfaces at concentrations up to 400ppm active without a potable water rinse.</p>		
40-50 (EPA Reg.#10324-31)	20% Dioctyl, 30% Didecyl, 50% Octyldecyl dimethyl ammonium chlorides	BTC 818 BTC 818-80%	Bardac 2050 Bardac 2080	FMB 302
4450-E (EPA Reg.#10324-34) 4480-E (EPA Reg.#10324-35)	Didecyl ammonium chloride	BTC 1010 BTC 1010-80%	Bardac 2250 Bardac 2280	FMB 210-5 FMB 210-8
<p>Dialkyl Blend Quats</p> 		<p>Dialkyl (Dialkyl Dimethyl Ammonium Chloride) Quats blended quats benefit from the increased surfactant and fragrance solubility with ADBACs, while exhibiting high germicidal performance, tolerance for protein loads and hard water. Maquat Dialkyl Blend Quats are FDA cleared for use as "indirect food additives" in sanitizing solutions for food contact surfaces at concentrations up to 400ppm active without a potable water rinse.</p>		
MQ 615M (EPA Reg.#10324-51) MQ 624M (EPA Reg.#10324-52)	40% n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride/ 60% Dioctyl, didecyl, octyldecyl dimethyl ammonium chlorides	BTC 885 BTC 888	Bardac 205M Bardac 208M	FMB 504 FMB 604-8
2420-50 (EPA Reg.#10324-126) 2420-80 (EPA Reg.#10324-127)	40% n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride/ 60% Didecyl ammonium chloride			FMB 504 FMB 604-8
<p>ADBAC Quats</p> 		<p>ADBAC (Alkyl DimethylBenzyl Ammonium Chloride) Quats are generally referred to as First Generation or Single Chain Quats. The Maquat ADBAC Series products provide a broad spectrum of bacteriological control at an economical price, and are FDA cleared for use as "indirect food additives" in sanitizing solutions for food contact surfaces at concentrations up to 200ppm active without a potable water rinse.</p>		
LC12S-50% (EPA Reg.#10324-3) LC12S-80% (EPA Reg.#10324-129)	n-Alkyl (67% C12, 25% C14, 7% C16, 1% C18) dimethylbenzyl ammonium chloride	BTC 65	Bardac LB-50 BioQuat 50-65	FMB 504
MC1412-50% (EPA Reg.#10324-6) MC1412-80%E (EPA Reg.#10324-14)	n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride	BTC 835 BTC 8358	Barquat MB-50 Barquat MB-80 Hyamine 3500	FMB 451-5 FMB 451-8
MC1416-50% (EPA Reg.#10324-8) MC1416-80% (EPA Reg.#10324-9) MC1416-80% (EPA Reg.#10324-165)	n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride	BTC 824 BTC 8248	Barquat MX-50 Barquat MX-80	FMB 4500-5 FMB 4500-8

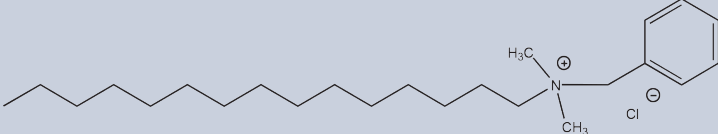
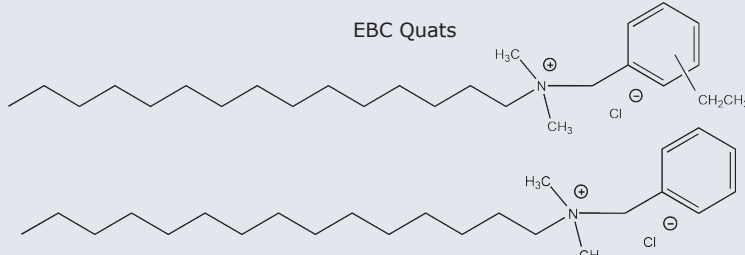
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Maquat® EPA Registered Products



Maquat Grade	Structure/Description	Cross Reference		
		Stepan	Lonza	
		EPA #1839	EPA#6836	EPA# 47371
MC5815 (EPA Reg.#10324-98) MC5815-80% (EPA Reg.#10324-89)	n-Alkyl (58% C14, 28% C16, 14% C12) dimethylbenzyl ammonium chloride		BioQuat 50-28 BioQuat 80-28	
MC6025-50% (EPA Reg.#10324-26)	n-Alkyl (60% C14, 25% C12, 15% C16) dimethylbenzyl ammonium chloride	BTC 2565 BTC 2568	Barquat PJ-50 Barquat OJ-80	FMB 65-15 FMB 65-28
TC76-50% (EPA Reg.#10324-1) TC76-80% (EPA Reg.#10324-149)	99.6% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 0.4% n-Dialkyl (60% C14, 30% C16, 5% C12, 5% C18) methylbenzyl ammonium chloride	BTC 776	Barquat 1552	
<p>EBC Quats</p>		<p>EBC (Alkyl DimethylEthylbenzyl Ammonium Chloride) Quats (blended with ADBACs) are generally referred to as Second Generation or Dual Chain Quats, with the advantage of organic soil tolerance allowing for "one-step" cleaning and disinfecting. Mason EBC quats are FDA cleared in sanitizing solutions for food contact surfaces up to 200ppm active without a potable water rinse</p>		
v-50% (EPA Reg.#10324-17) MQ2525-80% (EPA Reg.#10324-16)	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 50% n-Alkyl (50% C12, 30% C14, 17% C16, 3% C18) dimethylethylbenzyl ammonium chloride	BTC 2125 BTC 2125-80	Barquat 4250 Barquat 4280	FMB 6075-5 FMB 6075-8
MQ2525M-50% (EPA Reg.#10324-28) MQ2525M-80% (EPA Reg.#10324-27)	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 50% n-Alkyl (68% C12, 32% C14) dimethylethylbenzyl ammonium chloride	BTC 2125M BTC 2125M-80	Barquat 4250Z Barquat 4280Z	FMB 3328-5 FMB 3328-8
Maquat Grade	Structure/Description	BioRenewable %		
<p>Dialkyl Quats</p>				
40-50 (EPA Reg.#10324-31)	20% Dioctyl, 30% Didecyl, 50% Octyldecyl dimethyl ammonium chlorides	90		
4450-E (EPA Reg.#10324-34)* 4480-E (EPA Reg.#10324-35)	Didecyl ammonium chloride	91		
<p>Dialkyl Blend Quats</p>				

* Maquat 4450E/4480E EcoLogo approved for use in Environmental Choice™ Program CCD-166 Disinfectants and Disinfectants-Cleaners.

Maquat Grade	Structure/Description	BioRenewable %
MQ 615M (EPA Reg.#10324-51) MQ 624M (EPA Reg.#10324-52)	40% n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride/ 60% Dioctyl, didecyl, octyldecyl dimethyl ammonium chlorides	78
2420-50 (EPA Reg.#10324-126) 2420-80 (EPA Reg.#10324-127)	40% n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride/ 60% Didecyl ammonium chloride	79
ADBAC Quats		
		
LC12S-50% (EPA Reg.#10324-3) LC12S-80% (EPA Reg.#10324-129)	n-Alkyl (67% C12, 25% C14, 7% C16, 1% C18) dimethylbenzyl ammonium chloride	59
MC1412-50% (EPA Reg.#10324-6) MC1412-80%E (EPA Reg.#10324-14)	n-Alkyl (50% C14, 40% C12, 10% C16) dimethylbenzyl ammonium chloride	60
MC1416-50% (EPA Reg.#10324-8) MC1416-80% (EPA Reg.#10324-9)	n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride	62
MC5815 (EPA Reg.#10324-98) MC5815-80% (EPA Reg.#10324-89)	n-Alkyl (58% C14, 28% C16, 14% C12) dimethylbenzyl ammonium chloride	61
MC6025-50% (EPA Reg.#10324-26)	n-Alkyl (60% C14, 25% C12, 15% C16) dimethylbenzyl ammonium chloride	60
TC76-50% (EPA Reg.#10324-1) TC76-80% (EPA Reg.#10324-149)	99.6% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 0.4% n-Dialkyl (60% C14, 30% C16, 5% C12, 5% C18) methylbenzyl ammonium chloride	62
EBC Quats		
		
MQ2525-50% (EPA Reg.#10324-17) MQ2525-80% (EPA Reg.#10324-16)	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 50% n-Alkyl (50% C12, 30% C14, 17% C16, 3% C18) dimethylethylbenzyl ammonium chloride	58
MQ2525M-50% (EPA Reg.#10324-28) MQ2525M-80% (EPA Reg.#10324-27)	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) dimethylbenzyl ammonium chloride/ 50% n-Alkyl (68% C12, 32% C14) dimethylethylbenzyl ammonium chloride	58

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Oilfield Biocides



Oilfield Biocides						
Registration	Maquat 4450CT	Maquat 7.5M	Maquat 615CT	Maquat MC1416 255T	Maquat LC12S NT	Maquat 25:12
EPA Number	6836-70	6836-81	6836-73	6836-100	6836-186	6836-185
Active	MQ 4450	MQ 615	MQ615	MQ1416, TBTO	MQ LC12S	MQ 2420, Glute
California registration	X					
Canada registration	X					
Refinery and oilfield closed Industrial Recirculating water handling systems						X
Disposal Well Water						X
Drilling, completion and Workover Fluid Systems	X	X			X	X
Flood Water						X
Fracturing fluids	X	X			X	X
Fuel storage tanks						X
Gas production and transmission pipelines and systems	X	X			X	
Gas storage wells and systems	X	X			X	X
Gas storage fields and equipment, steam injection water holding tanks						X
Gas/oil drilling muds						X
Hydrotesting	X	X			X	X
Holding pond water						X
Injection water						X
Oilfield injection and waste water	X	X			X	X
Oilfield/petrochemical water subsurface injection systems				X		
Oil well drilling						X
Oil Field processing applications						X
Oil field water flood	X	X	X		X	X
Oil field water systems						X
Oil and Gas production and transmission pipelines and systems	X					X
Once through fresh water cooling systems					X	
Packer fluids	X	X			X	X
Petrochemical water subsurface injection systems	X					X
Pipeline pigging and scraping	X	X		X	X	
Refinery and oilfield closed, industrial recirculating water handling systems						X
Salt water disposal systems	X	X	X		X	X
Steam injection water holding tanks						X
Wastewater systems, sludge, and holding tanks	X					X
Oilfield/Petrochemical water subsurface injection systems				X		

Index by Product Name

Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
Aristonate® C-5000	Alkyl Aryl Sulfonate	Neutral Calcium Sulfonate (EW=515)	Liquid/50%	23, 24, 26
Aristonate® C-5020	Alkyl Aryl Sulfonate	Neutral Calcium Sulfonate (EW=515)	Liquid/50%	23, 24, 26
Aristonate® H	Alkyl Aryl Sulfonate	High Molecular Wt. Alkyl Aryl Sulfonate (MW=470)	Liquid/60%	23, 24, 26
Aristonate® L	Alkyl Aryl Sulfonate	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	23, 25, 26
Aristonate® M	Alkyl Aryl Sulfonate	Medium Molecular Wt. Alkyl Aryl Sulfonate (MW=430)	Liquid/60%	23, 25, 26
Aristonate® MME-60	Alkyl Aryl Sulfonate	Monoethanolamine Sulfonate (MW=470)	Liquid/60%	23, 24, 26
Aristonate® S-4000	Alkyl Aryl Sulfonate	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	23, 24, 26
Aristonate® S-4600	Alkyl Aryl Sulfonate	High Molecular Wt. Alkyl Aryl Sulfonate (MW=460)	Liquid/60%	23, 24, 26
Aristonate® S-5000	Alkyl Aryl Sulfonate	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=500)	Liquid/60%	23, 24, 26
Aristonate® VH-2	Alkyl Aryl Sulfonate	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=520)	Liquid/60%	23, 25, 26
Aristonic Acids		Alkyl Aryl Sulfonic Acid	Liquid/85-90%	23, 24, 26
Calamide® C	Alkanolamide	Cocamide DEA	Liquid/100%	5, 15, 23, 26
Calamide® CW-100	Alkanolamide	Cocamide DEA	Liquid/100%	15, 23, 26
Calamide® CWT	Alkanolamide	Modified Cocamide DEA	Liquid/100%	15, 23, 26
Calamide® F	Alkanolamide	Modified Oleamide DEA	Liquid/100%	5, 15, 23, 25, 26
Calamide® MC	Alkanolamide	Cocamide MEA	Flake/100%	5, 15, 23, 26
Calamide® O	Alkanolamide	Cocamide DEA (and) Oleamide DEA	Liquid/100%	5, 15, 23, 26
CalBlend® CLEAR	Performance Blend	Sodium Laureth Sulfate (and) Cocamidopropyl Betaine (and) Cocamide DEA	Liquid/35%	6, 19
CalBlend® DF	Performance Blend	Sodium Laureth Sulfate, Sodium Lauryl Sulfate, Cocamidopropyl Betaine, Cocamide MIPA	Liquid/30%	6
CalBlend® ECO-1	Performance Blend	Sodium Lauryl Sulfate (and) Sodium Laureth Sulfate (and) Cocamidopropyl Betaine (and) Cocamide MEA	Liquid/35%	6, 19
CalBlend® ECO-40D	Performance Blend	Sodium Lauryl Sulfate (and) Cocamide DEA (and) Cocamidopropyl Betaine	Liquid/40%	19
CalBlend® FREE	Performance Blend	Sodium Lauryl Sulfate (and) Cocamide DEA (and) Cocamidopropyl Betaine	Liquid/40%	19
CalBlend® MILD	Performance Blend	Sodium Laureth Sulfate, PEG-80 Sorbitan Laurate, Lauramidopropyl Betaine, PEG-150 Distearate	Liquid/30%	6
CalBlend® PEARL	Performance Blend	Sodium Laureth Sulfate (and) Cocamidopropyl Betaine (and) Cocamide DEA (and) EGMS	Liquid/36%	6

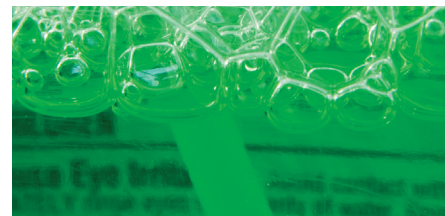
Index by Product Name



Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
CalBlend® SF	Performance Blend	Sodium C14-16 Olefin Sulfonate, Cocamidopropyl Betaine, Cocamide MIPA	Liquid/30%	6
Calfax® 10L-45	Diphenyl Oxide Disulfonate	Sodium C10 Linear Diphenyl Oxide Disulfonate	Liquid/45%	17, 20, 23, 26
Calfax® 16L-35	Diphenyl Oxide Disulfonate	Sodium C16 Linear Diphenyl Oxide Disulfonate	Liquid/35%	17, 20, 23, 25
Calfax® 6LA-70	Diphenyl Oxide Disulfonic Acid	C6 Linear Diphenyl Oxide Disulfonic Acid	Liquid/72%	17, 20, 23
Calfax® DB-45	Diphenyl Oxide Disulfonate	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	17, 20, 23, 25, 26
Calfax® DBA-40	Diphenyl Oxide Disulfonic Acid	C12 Branched Diphenyl Oxide Disulfonic Acid	Liquid/40%	20, 23
Calfax® DBA-70	Diphenyl Oxide Disulfonic Acid	C12 Branched Diphenyl Oxide Disulfonic Acid	Liquid/71%	17, 20, 23
Calfoam® ALS-30	Alcohol/Ether Sulfate	Ammonium Lauryl Sulfate	Liquid/30%	5, 15
Calfoam® ALS-70	Alcohol/Ether Sulfate	Ammonium Lauryl Sulfate	Liquid/70%	15
Calfoam® EA-303	Alcohol/Ether Sulfate	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/26%	4, 14, 20
Calfoam® EA-603	Alcohol/Ether Sulfate	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/60%	4, 14, 23
Calfoam® EA-682	Alcohol/Ether Sulfate	Ammonium Decyl Ether Sulfate (2.2 Mole EO)	Liquid/60%	14, 23, 26
Calfoam® EA-703	Alcohol/Ether Sulfate	Ammonium Laureth Sulfate (3 Mole EO)	Liquid/70%	4, 14
Calfoam® ES-301	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (1 Mole EO)	Liquid/26%	4, 14
Calfoam® ES-302	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%	4, 14, 26
Calfoam® ES-302HS	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%	4, 14
Calfoam® ES-302HV	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%	14
Calfoam® ES-302LD	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/27%	4, 14
Calfoam® ES-303	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (3 Mole EO)	Liquid/28%	4, 14
Calfoam® ES-562	Alcohol/Ether Sulfate	Sodium Laureth Sulfate	Liquid/60%	4
Calfoam® ES-603	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (3 Mole EO)	Liquid/60%	14
Calfoam® ES-702	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/70%	4, 14
Calfoam® ES-702LD	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (2 Mole EO)	Liquid/70%	4, 14
Calfoam® ES-703	Alcohol/Ether Sulfate	Sodium Laureth Sulfate (3 Mole EO)	Liquid/70%	4, 14

Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
Calfoam® SLS-30	Alcohol/Ether Sulfate	Sodium Lauryl Sulfate	Liquid/30%	5, 15, 26
Calfoam® TLS-40	Alcohol/Ether Sulfate	TEA Lauryl Sulfate	Liquid/40%	5, 15
Calimulse® AOS	Sulfonate	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40%	21
Calimulse® EM-22	Alkyl Benzene Sulfonate	Sodium Branched Alkyl Benzene Sulfonate	Liquid/22%	21
Calimulse® EM-95	Alkyl Benzene Sulfonic Acid	Branched Dodecyl Benzene Sulfonic Acid	Liquid/95%	22
Calimulse® EM-96F	Alkyl Benzene Sulfonate	Sodium Branched Alkyl Benzene Sulfonate	Flake/96%	21, 26
Calimulse® EM-99	Alkyl Benzene Sulfonic Acid	Branched Dodecyl Benzene Sulfonic Acid	Liquid/97%	22, 23
Calimulse® L-22	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Liquid/22%	21
Calimulse® L-30	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Liquid/30%	21
Calimulse® L-50	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Paste/50%	21
Calimulse® PR	Alkyl Benzene Sulfonate	Isopropylamine Branched Alkyl Benzene Sulfonate	Liquid/90%	21, 23, 26
Calimulse® PRS	Alkyl Benzene Sulfonate	Isopropylamine Linear Alkyl Benzene Sulfonate	Liquid/93%	16, 21, 23, 26
Calimulse® SLS	Alcohol/Ether Sulfate	Sodium Lauryl Sulfate	Liquid/30%	20
Calinate® LE	Mild Specialty	Disodium Laureth Sulfosuccinate	Liquid/40%	7, 19
Caloxamine® CPO	Mild Specialty	Cocamidopropylamine Oxide	Liquid/32%	8, 19
Caloxamine® LO	Mild Specialty	Lauramine Oxide	Liquid/30%	8, 19
Calsoft® AOS-1245	Sulfonate	Sodium C12 Alpha Olefin Sulfonate	Liquid/45%	16, 23, 26
Calsoft® AOS-40	Sulfonate	Sodium C14-16 Alpha Olefin Sulfonate	Liquid/40%	7, 16, 23, 26
Calsoft® AOS-FS	Sulfonate	Sodium C14-16 Olefin Sulfonate	Liquid/43%	16
Calsoft® F-90	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Flake/90%	16, 21, 23, 27
Calsoft® L-40	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Liquid/40%	16, 27
Calsoft® L-40 Slurry	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/40%	16
Calsoft® L-50 Slurry	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/50%	16
Calsoft® L-60	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Paste/60%	16

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Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
Calsoft® L-60 Slurry	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate Slurry	Slurry/60%	16
Calsoft® LAS-99	Alkyl Benzene Sulfonic Acid	Linear Alkyl Benzene Sulfonic Acid	Liquid/97%	16, 22, 23, 27
Calsoft® LPS-99	Alkyl Benzene Sulfonic Acid	Linear Alkyl Benzene Sulfonic Acid	Liquid/97%	16
Calsoft® OA-50	Sulfonic Acid	Oleic Sulfonic Acid	Liquid/50%	17, 27
Calsoft® OS-45S	Sulfonate	Sodium Oleic Sulfonate	Liquid/45%	17, 21, 25, 27
Calsoft® P-85	Alkyl Benzene Sulfonate	Sodium Linear Alkyl Benzene Sulfonate	Flake/85%	16
Calsoft® T-60	Alkyl Benzene Sulfonate	Triethanolamine Dodecylbenzene Sulfonate	Liquid/60%	7, 16
Calsuds® 81	Performance Concentrate	Proprietary Concentrated Detergent Blend	Liquid/60%	18
Calsuds® A	Performance Concentrate	Proprietary Concentrated Detergent Blend	Liquid/50%	18
Calsuds® CD-6	Performance Concentrate	Proprietary Modified Coconut Diethanolamide	Liquid/100%	18
Calsuds® CWC-2	Performance Concentrate	Proprietary Detergent Blend	Liquid/43%	18
Caltaine® C-35	Mild Specialty	Cocamidopropyl Betaine	Liquid/30%	9, 19, 23
Caltaine® L-35	Mild Specialty	Lauramidopropyl Betaine	Liquid/30%	9, 19
Enhansys CG-100	Preservative and Preservative Alternative	Caprylyl Glycol	Liquid/Solid 100%	10
Enhansys M-100	Preservative and Preservative Alternative	Glycereth-2 Cocoate & Benzoic Acid	Liquid/100%	10
Macare G-2C, 7C, 17C	Specialty	Glycereth Cocoate	Liquid/100%	10
Macare HP-230	Specialty	Acrylates Copolymer	Liquid/100%	11
Macare OP	Specialty	Ethylhexyl Palmitate	Liquid/100%	10
Macat AEC-126	Specialty	Laureth-6 Carboxylic Acid	Liquid/90%	7
Macat AO-12	Amines	Lauryl Dimethylamine Oxide	Liquid/30%	8
Macat AO-12-2	Amines	Dihydroxyethyl Cocamine Oxide	Liquid/30%	8
Macat AO-14	Amines	Myristamine Oxide	Liquid/30%	8
Macat AO-16	Amines	Palmitamine Oxide	Liquid/30%	8
Macat AO-18:1	Amines	Oleamine Oxide	Liquid-Gel/30%	8

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Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
Macat BD	Amines	Behenamidopropyl Dimethylamine	Pastille/100%	8
Macat CAP-HS	Betaines/ Sultaines	Cocamidopropyl Hydroxysultaine	Liquid/44%	9
Macat CB	Betaines/ Sultaines	Cetyl Betaine	Liquid/34%	9
Macat LB	Betaines/ Sultaines	Lauryl Betaine	Liquid/30%	9
Macat LFB	Betaines/ Sultaines	Capryl/Capramidopropyl Betaine	Liquid/30%	9
Macat MCO	Amines	C12-18 Alkyldimethyl Amine N-Oxides	Liquid/30%	8
Macat OB	Betaines/ Sultaines	Oleyl Betaine	Liquid/28%	9
Macat Ultra CDO	Amines	Cocamidopropylamine Oxide	Liquid/32%	8
Macat Ultra CG	Betaines/ Sultaines	Cocamidopropyl Betaine	Liquid/30%	9
Macat Ultra LMDO	Amines	Lauramidopropylamine Oxide	Liquid/30%	8
Maguard H-55	Preservative and Preservative Alternative	DMDM Hydantoin	Liquid/55%	10
Maquat BTMC-25	Alkyl Trimethyl Ammonium Chlorides	Behentrimonium Chloride	Flake/25%	11
Maquat BTMC-85	Alkyl Trimethyl Ammonium Chlorides	Behentrimonium Chloride	Flake/80%	11
Maquat C-15	Alkyl Dimethyl Benzyl Ammonium Chlorides	PEG-15 Cocomonium Chloride	Liquid/95%	11
Maquat CETAC-30%	Alkyl Trimethyl Ammonium Chlorides	Cetrimonium Chloride	Liquid/30%	11
Maquat OAC	Alkyl Dimethyl Benzyl Ammonium Chlorides	Olealkonium Chloride	Liquid/50%/80%	11
Maquat PQ-100 Series	Specialty	Polymethacrylamidopropyl Trimonium Chloride	Liquid/30%	12
Maquat PQ-200 Series	Specialty	Polyquaternium 37	Liquid/30%	12
Maquat SC1632	Alkyl Dimethyl Benzyl Ammonium Chlorides	Cetearyl Alcohol, PEG 40 Castor Oil, Stearalkonium Chloride	Flake/14%	11
Maquat® SC18	Alkyl Dimethyl Benzyl Ammonium Chlorides	Stearalkonium Chloride	Paste/Flake/25%/85%	11
Maquat® SL-5	Specialty	Dihydroxypropyl PEG-5 Linoleammonium Chloride	Liquid/40%	12
Maquat® SOY-QSX	Specialty	Soy Trimethoxysilylpropyldimonium Chloride	Liquid/80%	12
Masamide® R-4	Alkanolamides	PEG-4 Rapeseedamide	Liquid/90%	5
Masamide® REP	Performance Blend	Surfactant Blend	Liquid/36%	6

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Product Name	Type	INCI/Chemical Name	Physical Foam/Activity	Page Number(s)
Mason® CS-445, CS-448	Specialty	Didecyldimonium Chloride	Liquid/50%/80%	12
Masoteric® 160C-30	Specialty	Sodium Lauriminodipropionate	Liquid/30%	7
Masurf® AF-110DE	Specialty	DEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid/7%	13
Masurf® AF-110DI	Specialty	Alcohol Foaming Surfactant	Liquid/7%	13
Masurf® AF-410TE	Specialty	TEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid/7%	13
Masurf® Emulsifying Wax NF	Specialty	Nonionic Emulsifier	Pastille/100%	10
Masurf® FS-115, FS-130	Oil Resistant Specialty	DEA-C8-18 Perfluoroalkylethyl Phosphate	Liquid / 15%/30%	12
Masurf® FS-130A	Oil Resistant Specialty	Ammonium-C6-16 Perfluoroalkylethyl Phosphate	Liquid/30%	12
Masurf® FS-630 EB/ FS-630 DB	Fluorosurfactant	Fluoroaliphatic Sodium Sulfosuccinate Fluorosurfactant	Liquid/30%	22
Masurf® FS-1620	Specialty	C4-18 Perfluoroalkylethyl Thiohydroxypropyltrimonium Chloride	Liquid/20%	12
Masurf® FS-2620	Fluorosurfactant	Fluoroaliphatic Sodium Sulfonate Fluorosurfactant	Liquid/20%	22
Masurf® FS-2800	Fluorosurfactant	Fluoroaliphatic Surfactant	Paste/Waxy Solid/100%	22
Masurf® FS-2825	Fluorosurfactant	Fluoroaliphatic Surfactant	Liquid/25%	22
Masurf® FS-2900	Fluorosurfactant	Fluoroaliphatic Surfactant	Solid/100%	22
Masurf® FS-2950	Fluorosurfactant	SCT Fluoroaliphatic Surfactant	Liquid/50%	22
Masurf® FS-3300/ FS-3330 A	Fluorosurfactant	Fluoroaliphatic Phosphate Ester Fluorosurfactant	Solid/100% Solid/30%	22
Pilot® D-300	Specialty	4 Sulfophthalic Acid	Liquid/50%	27
Pilot® DABSA	Sulfonic Acid	Alkyl Aryl Sulfonic Acid	Liquid/80%	23, 25
Pilot® EM-95	Alkyl Benzene Sulfonic Acid	Branched Dodecyl Benzene Sulfonic Acid	Liquid/90%	27
Pilot® EM-99	Alkyl Benzene Sulfonic Acid	Branched Dodecyl Benzene Sulfonic Acid	Liquid/95%	27
Pilot® PTSA-65	Sulfonic Acid	p-Toluene Sulfonic Acid	Liquid/65%	18, 27
Pilot® PTSA-99	Sulfonic Acid	Anhydrous p-Toluene Sulfonic Acid	Paste-Crystals/98%	27
Pilot® SXS-40	Sulfonate	Sodium Xylene Sulfonate	Liquid/40%	18, 25
Pilot® SXS-96	Sulfonate	Sodium Xylene Sulfonate	Powder/95%	18

Product Name	INCI/Chemical Name	CFR Qualification
Calamide® C	Cocamide DEA	21CFR 175.105
Calamide® CW-100	Cocamide DEA	21CFR 175.105
Calfax® 10L-45	Sodium C10 Linear Diphenyl Oxide Disulfonate	21CFR 178.3400
Calfax® 10LA-75	C10 Linear Diphenyl Oxide Disulfonic Acid	21CFR 178.3400
Calfax® 16L-35	Sodium C16 Linear Diphenyl Oxide Disulfonate	21CFR 178.3400
Calfax® DB-45	Sodium C12 Branched Diphenyl Oxide Disulfonate	21CFR 175.105, 176.170*
Calfax® TG-45	Sodium C12 Branched Diphenyl Oxide Disulfonate	21CFR 175.105, 176.170*, 176.180*
Calfoam® ALS-30	Ammonium Lauryl Sulfate	21CFR 176.170*, 176.180*
Calfoam® ALS-70	Ammonium Lauryl Sulfate	21CFR 178.3400
Calfoam® SLS-30	Sodium Lauryl Sulfate	21CFR 176.170*, 176.180*
Calimulse® AOS-40	Sodium C14-16 Alpha Olefin Sulfonate	21CFR 175.105
Calimulse® L-30	Sodium Linear Alkyl Benzene Sulfonate	21CFR 178.3400
Calimulse® L-50	Sodium Linear Alkyl Benzene Sulfonate	21CFR 178.3400
Calimulse® PRS	Isopropylamine Linear Alkyl Benzene Sulfonate	21CFR 176.210
Calimulse® SLS	Sodium Lauryl Sulfate	21CFR 176.170*, 176.180*
Calsoft® AOS-40	Sodium C14-16 Olefin Sulfonate	21CFR 175.105
Calsoft® L-40	Sodium Linear Alkyl Benzene Sulfonate	21CFR 175.105
Calsoft® L-40 Slurry	Sodium Linear Alkyl Benzene Sulfonate Slurry	21CFR 178.3400
Calsoft® L-50 Slurry	Sodium Linear Alkyl Benzene Sulfonate Slurry	21CFR 178.3400
Calsoft® L-60	Sodium Linear Alkyl Benzene Sulfonate	21CFR 175.105
Calsoft® L-60 Slurry	Sodium Linear Alkyl Benzene Sulfonate Slurry	21CFR 178.3400
Calsoft® LAS-99	Linear Alkyl Benzene Sulfonic Acid	21CFR 178.3400
Calsoft® LPS-99	Linear Alkyl Benzene Sulfonic Acid	21CFR 178.3400
Pilot® SXS-40	Sodium Xylene Sulfonate	21CFR 175.105, 176.170*, 176.180*
Pilot® SXS-96	Sodium Xylene Sulfonate	21CFR 175.105, 176.170*, 176.180*

* This product has limitations associated with the section of the CFR indicated. Please contact your sales representative to obtain a copy of the Food Contact Declaration of Compliance (FCDC) which will provide a detailed description of these limitations.

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