



Phoenix Concepts & Innovations

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Phoenix Expands Line of Silicone Fluids

Dimethicones that are ethoxylated and/or propoxylated are popular go-to cosmetic ingredients due to their aesthetics and versatility. Phoenix markets several alkoxyated dimethicones for use as surfactants, viscosity increasing agents, emulsion stabilizers, foam building agents, skin/hair conditioning agents, wetting agents and emollients. As amphiphilic compounds, these high-tech silicones have varying levels of solubility in water, oils and silicone. They are frequently employed for silicone-in-water emulsions, water-in-silicone emulsions or water-in-oil emulsions and impart good slip and a silky touch on the skin.

Products

Our expanded line includes PEG/PPG-18/18 Dimethicone, PEG-12 Dimethicone, Cetyl PEG/PPG/10/1 Dimethicone, and a silicone ester, PEG-7 Undecylenate.

- **Pecosil DCF-1818** (INCI: PEG/PPG-18/18 Dimethicone) contains an average of 18 mols of ethylene oxide and 18 mols of propylene oxide. It has a light texture and is added to the silicone or oil phase. It is frequently employed as silicone-in-water emulsifier (approximated HLB value of 8) and solubilizing agent, as it is both water and alcohol soluble and is also soluble in many cosmetic oil esters.

It is therefore useful in a broad range of cosmetics such as moisturizers, suntan products, deodorants, body and hand products, and hair sprays.

- **Pecosil DCF-12** (INCI: PEG-12 Dimethicone) contains an average of 12 mols of ethylene oxide. It provides silicone-in water emulsions providing excellent conditioning and foam and popular for shaving products. It has an approximate HLB value of 13.
- **Pecosil C101D** (INCI: Cetyl PEG/PPG-10/1 Dimethicone) is an organic silicone of cetyl dimethicone containing an average of 10 mols of ethylene oxide and one mol of propylene oxide. It is an excellent skin conditioner and emulsifier useful to produce water-in-silicone emulsions and water-in-oil emulsions. Very popular in skincare, suncare and pigmented make-up products such as eye-creams, foundations, concealers, and lipstick. It has an approximate HLB level of 3.
- **Pecosil DCU** (INCI: Dimethicone PEG-7 Undecylenate) is the ester of PEG-7 dimethicone and undecylenic acid. It is soluble in water and castor oil and can function as an emulsifier, emollient and coupling agent. It is useful in lipsticks, creams, lotions, nail conditioners, and bath products.

Highly Functional Phoenate PEG Esters

Why choose **Phoenate** ester surfactants you ask, Its simple: they are truly impactful to your products performance as they function as emulsifying, cleansing and solubilizing agents. Let's review their cosmetic alchemy.

Ester Surfactants

The **Phoenate Ester** line consists of PEG diesters of stearic acid, lauric acid and oleic acid, two PEG mono esters of oleic acid and two polyoxyethylene glyceryl fatty acid esters. These ester surfactants and emulsifiers are produced by the esterification of fatty acids with polyethylene glycol. The average ethoxylation value corresponds to the PEG number in the name. For example, PEG-150 Distearate is a polyethylene glycol diester prepared from a polyethylene glycol chain that is 150 ethylene oxide repeated units on average esterified with stearic acid. The number is important since as the number increases the water solubility increases.

Features

- Offer excellent thickening properties
- Water soluble emollient and moisturizer
- Anti-Irritant: Re-fat the skin (reducing irritation of surfactants)
- Solubilize oil based ingredients for water based products
- Impart slipperiness to shampoos and conditioners
- Increases the creamy feel of lather without decreasing foam
- Will not hydrolyze in water
- Non-Ionic

PEG-Distearates

Phoenate 150 DSA (PEG-150 Distearate) and **Phoenate 3 DSA** (PEG-3 Distearate) are polyethylene glycol diesters of stearic acid (C18 fatty acid).

Pecosil FDM-30 Water Soluble Fluorosilicone

Marketing pressure, formulation deadlines, and the quest to surpass the established benchmark aesthetics are issues which are no strangers to the cosmetic formulation chemist. **Pecosil FDM-30** (Perfluoronylethyl Carboxydecyl PEG-10 Dimethicone) opens the door to a new world of emollients. **Pecosil FDM-30** delivers satin emollient properties previously only available in anhydrous make-up cosmetics.

Features of Pecosil FDM-30 Conditioning and Emulsifying Agent

- Film Forming
- Solubilizing
- Oleophobic
- Lubricating
- Softening
- Hydrophilic
- Dispersing
- Foaming

Phoenate 150 DSA is a flake material and offers exceptional thickening and will emulsify at use level of 2%. It is useful in bath, shampoo and personal cleansing products.

Phoenate 3 DSA is a solid material and has been designed as an outstanding pearlizing agent for shampoo and lotions.

PEG-Dilaurates

Phoenate DL-4 (PEG-4 Dilaurate) and **Phoenate DL-8** (PEG-8 Dilaurate) are polyethylene glycol diesters of lauric acid (C12 fatty acid). These are both liquid materials and effective moisturizing emulsifiers.

PEG Oleates

Phoenate PEG-8 (PEG-8 Oleate) and **Phoenate PEG-12** Monooleate are polyethylene glycol monoesters of oleic acid (C18:1 fatty acid). They are liquid materials. These products are penetration enhancers and impart creamy lubricity and provide low to midrange HLB emulsions with an approximate HLB value between 11 and 13. Phoenate PEG-8 is also an opacifier.

Polyoxyethylene Glyceryl Fatty Acid Esters

Phoenate GC-7 (PEG-7 Glyceryl Cocoate) and **Phoenate GC-30** (PEG-30 Glyceryl Cocoate) are polyoxyethylene glycol ethers of glyceryl cocoate. These conditioning emollients function as an o/w emulsifiers and conditioning hydrophilic esters for skin and hair. They act as re-fattening skin lubricants and soften skin. They will deliver shine to hair and great moisturization to body wash. Phoenate GC-7 has an HLB between 10 and 12.

Love your lather and use Phoenate Ester Surfactants to spring-load moisturization and enhance thickening while reducing irritation in your high-tech water based personal care products.



The unique silky smooth feel, cushion, solubility and barrier properties suggest their use in:

- Hair Detanglers & Conditioners
- Shampoos & Body Wash
- Shaving Products
- Sunscreens
- Skin Creams & Lotions
- Bath Products
- Make-up

Pecosil FDM-30 is designed to offer substantive solutions to your formulation challenges. Unleash your formulating creativity and utilize **Pecosil FDM-30** to develop unique formulations.

Paris Pelemol's Beauty Forum



Superior Leave-In Spray Hair Conditioner

Hello Friends,

Is your hair in need of restorative silky conditioning? When my friends at Phoenix Chemical ask me to create a leave-in spray conditioner, I immediately thought of the downside of leave-in sprays: greasy build-up. I set out to solve this problem by selecting Phoenix Chemicals conditioners that work synergistically to deposit light silky conditioning to the hair. **Pecosil PSQ 418** (Stearimonium Hydroxypropyl PEG-7 Dimethicone Phosphate), is a most elegant silky quaternary conditioner that works with **Pecosil FDM-30** (Perfluorononyl ethyl Carboxydecyl PEG-10 Dimethicone) to plate out the fluoro moiety to detangle hair and eliminate frizzy hair formation, while the **Dicopamine PC-35** (Centrimonium Chloride (and) Dimethicone PEG-7 Phosphate) conditions and also works to bring all these conditioners to the surface of the hair. Lastly, **Pecosil DCF-1818** (PEG/PPG-18/18 Dimethicone) is an emulsifier which efficiently wets the hair and also contributes to a conditioned appearance.

My leave-in spray conditioner leaves your hair looking moisturized and conditioned and feeling light and silky. You can't live without it. Your hair will be gorgeous!

With Love and Beauty,

Paris Pelemol
Paris Pelemol

Who is Paris Pelemol?

Paris Pelemol, energetic cosmetic formulator and cosmetic guru believes that beauty is an attitude and beauty starts with quality. When it comes to seeking quality, Paris is all business. She is a woman who lives for beauty and refinement. Her clientele are known for having "the best". She desires quality because quality speaks for itself. Her formulations consist of cutting edge technology and are frequently sighted as the benchmark for elegance. Paris is brimming over with knowledge regarding which cosmetic materials will deliver a blue print for imparting elegance to beauty products. Paris will guide you every step of the way to identifying the key ingredients that will enable you to achieve your dream formulations and help your clients look their absolute best! Beauty is within reach, with a little help from Paris.

Chef's Corner

Chicken Breast Zingara

**A comfort food gypsy classic that
is truly pleasure on the plate.**

Ingredients:

- 4 Chicken breasts, filleted
- ½ lb Mozzarella, sliced
- 1 x 8 oz can tomato puree
- 1 large yellow onion, diced
- 2 yellow bell peppers, sliced
- 1 tbsp oregano
- 1 tbsp dry, crushed basil
- ½ cup (packed) fresh basil leaves
- 1 tsp ground black pepper
- 1 tbsp salt
- 2 oz olive oil (EVOO)
- ½ of one stick of butter

Preparation:

Add olive oil and butter to large deep pan with cover. Add chicken breasts and sauté over low heat until slightly golden on each side. Set aside.

Add onion and bell pepper to pan cover, and sauté over low heat until pepper is wilted. Return chicken to pan. Pour tomato puree evenly over chicken. Next sprinkle salt, black pepper, oregano, basil evenly over tomato, cover and simmer over low heat for 1 ½ hours. Place mozzarella slices evenly over chicken breasts, cover, and continue simmering for 15 minutes more.

Chicken breasts can now be served. Serves 4. Roasted potatoes make an excellent accompanying dish.

CHEMISTRY CLASS

Group Opposites

The concept of hydrophobic and hydrophilic is relatively easily understood by the formulating chemist. Simply put things that are hydrophobic are water hating materials. This simple definition works well with oil and water systems. Oils are hydrophobic (water hating), water soluble materials are hydrophilic (water loving). The other side of the coin is that oils are oleophilic (oil loving) and water soluble materials are oleophobic (oil hating).

As is normally the case, the world is more complicated. Silicone is neither oil soluble, nor water soluble. Silicone oil is in fact hydrophobic (water hating) and oleophobic (oil hating). Defining a phase by what its incompatibilities are is not technically appealing. Silicone oil is siliphilic (silicone loving).

The Group Opposites are:

- Hydrophilic (water loving)
- Hydrophobic (water hating)
- Oleophilic (oil loving)
- Oleophobic (oil hating)
- Siliphilic (silicone loving)
- Siliphobic (silicone hating)

Hydrophobic (water hating) materials can be either oleophilic or siliphilic. Oleophobic (oil hating) materials may be either oleophilic or hydrophilic. Does this have any practical implications? Absolutely! Consider a hydrophobic carpet fiber. It could be treated with silicone or with hydrocarbon. If treated with silicone, the fiber will also be oleophobic. If treated with oil, the fiber will be siliphobic. For application in waterproofing carpet fibers, selection of the proper molecule is critical. Since most people have cooking oil in their homes, and it will stain a hydrocarbon treated fiber, silicone coatings are preferred. Improper selection will result in unacceptable oil staining.

What does this mean in cosmetics? Next time you work with a treated pigment, ask yourself should my oil phase be siliphilic or oleophilic?



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