

## **SOCIETY OF COSMETIC CHEMISTS**

# THE SOUTHEAST CHAPTER



#### Volume XXXII, Number 5

November 2014

2014 Southeast Chapter Officers

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#### **Southeast Chapter Officer Installation**

Installation by: Michelle Linscott and Danielle Wheeler
Area IV Directors

Wednesday, November 19, 2014

Location: Erling Jensen Restaurant 1044 South Yates Road Memphis, TN

5:30 pm to 6:15 pm - Registration / Cocktails 6:15 pm to 7:30 pm - Dinner 7:30 pm Officer Installation

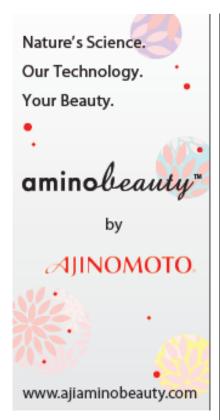
> \$45 SCC Chapter member \$50 non-SCC member

RSVP by <u>noon, November 17th</u> to Paul Allen (901) 320-2252 or e-mail: paul.allen1@bayer.com



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# Message from the Southeast Chair

Hello and greetings from the chair. What a great fall we are having, it is my favorite time of the year. The CEP course we hosted in September "Polymer Stabilization of Emulsions, Dispersions and Structered Liquid" taught by Dr. Bob Lochhead was outstanding. Bob is a member of our Southeast chapter, a true friend of the SCC, and a great presenter. We were the first group to use Bayer's new Innovation Presentation Room in Memphis which was awesome. The class was very informative, and the cocktail hour afterward was a great place to catch up.

Lisa Sloan, House Committee, has out done herself this year for the officer installation venue.

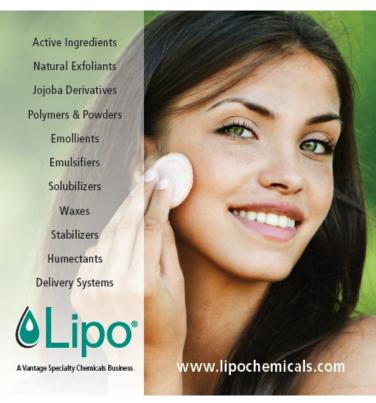
> Officer Installation November 19, 2014 Erling Jensen 1044 Yates Rd Memphis, TN 38119

Erling Jensen is one of the best eateries in town. If you have not tried it yet please take the time to have fun with us and experience one of the finest restaurants in the country.

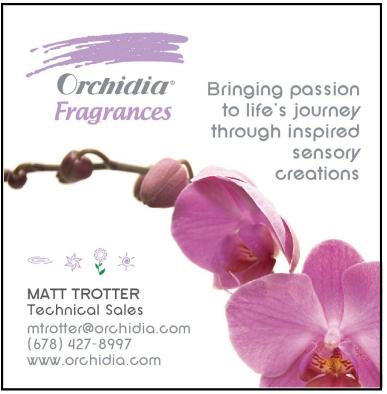
In preparation for Officer Installation you will be receiving your ballots in the mail. Please take a minute to cast your vote.

See you at the officer installation and please remember to RSVP with Paul Allen our chapter secretary!

Sincerely, Stephen Baldwin SCC Southeast Chapter Chair









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#### How Do Cosmetic Raw Materials Get Their Names?

by Perry Romanowski on 03/20/2014

I must confess. One of my favorite things about being a chemist is getting to say long words and knowing what they mean. I loved learning the <a href="IUPAC">IUPAC</a> system for naming chemicals.

That's why I found ingredient lists on shampoos & conditioners baffling. I didn't know what most of the chemicals were. They were similar to IUPAC terms, but not quite. It turns out that the cosmetic industry doesn't use the IUPAC naming system. Instead, they follow their own system as laid out in the <a href="International Nomenclature of Cosmetic Ingredients">International Nomenclature of Cosmetic Ingredients</a> (INCI) dictionary. This volume is produced by the main cosmetic industry trade group called the <a href="Personal Care Products Council">Personal Care Products Council</a> (PCPC, formerly the CTFA but we'll save that for another time.

#### **List of Ingredients**

The first thing to know about cosmetic ingredients is the ingredient list. In the United States, every personal care and cosmetic product is supposed to have their ingredients listed. In the business, we called it the LOI (list of ingredients). Any ingredient above 1% is required to be listed in order of concentration (by weight). At 1% or below, the ingredients can be listed in any order. Typically, preservatives and dyes are listed at the end. In a future post, we'll show how this labeling requirement can help you formulate new products.

Any ingredient above 1% is required to be listed in order of concentration (by weight).

To be proper, companies are supposed to follow the naming conventions as laid out in the INCI.

#### **Cosmetic Ingredient Naming Conventions**

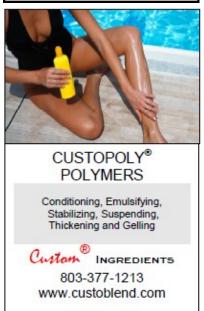
While many chemical names in the INCI seem arbitrary, there are some standard rules. The following will help you make heads or tails out of the ingredients on most LOIs. We can't list all the conventions here, but we'll point out the major ones and give examples.

Continued on page 4.









#### **Common Names**

When they first came up with the INCI (originally called the CTFA Cosmetic Ingredient Dictionary) in 1973, many cosmetic ingredients already had names. These common names were incorporated into the dictionary even though they didn't follow any specific naming rules. Therefore, we use Glycerin instead of the more accurate Glycerol and Menthol instead of (1R, 2S, 5R)-2-isopropyl-5-methylcyclohexanol. Common names are also used for various natural ingredients like Lanolin and Beeswax.

#### **Stem Names**

Probably the most important thing to learn about naming cosmetic ingredients is to memorize this list of hydrocarbon stem names. It's a bit different than the IUPAC.

So, if you have a 16-carbon alcohol, you call it Cetyl Alcohol instead of Hexadecanol. For an 18-carbon acid, you would use Stearic Acid instead of Ocatdecanoic acid.

#### **Mixtures**

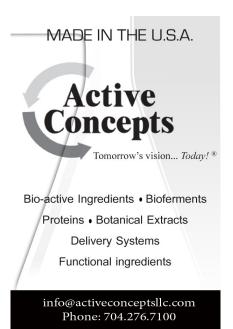
You'll run into names like Cocamidopropyl Betaine that don't match any of the stem names. This is because the raw material uses coconut oil as a starting raw material. In these cases, you use an abbreviation of that starting material. Other ones you might see include Palm Kernel oil, Soybean oil and Sunflower oil. In a future post, we'll show the fatty acid distribution of these materials.

#### **Derivatives**

The INCI tries to follow established conventions from other systems. For example, when you want to name an ether, you take the stem names from both fatty acids and add the term ether. Thus, a molecule made with a 14-carbon and 16-carbon chains connected by an oxygen would be called Cetyl Myristyl Ether. An ester of the same molecules would be Cetyl Myristate.

#### **Nitrogen Containing**

Hydrocarbons that contain nitrogen are amides and have the phrase included in their name. Therefore, Lauramide is used to describe a 12-Carbon molecule (Lauryl) that has a NH2 group on its end. If the Nitrogen has other hydrocarbons attached, those are also named. So, Lauramide DEA would be that same 12-Carbon molecule attached to a Nitrogen which also has Ethyl groups attached to it. When these Nitrogen containing compounds are turned into salts, the suffix "-monium" is added. So, a 16-Carbon attached to a Nitrogen with three methyl groups is Cetrimonium Chloride.







#### **Polymers**

A variety of conventions are used to name polymers. For Nitrogen containing polymers, the term "Polyquaternium" is used. There is also a number associated with the ingredient but it doesn't refer to anything chemically. It just happens to be the order in which the material was registered.

Other polymers use common abbreviations. PEG is Polyethylene Glycol. PPG is Polypropylene Glycol, etc. Then a number is included to refer to the moles of ethoxylation in the polymer.

#### **Silicones**

For silicone containing materials, terms like Dimethicone, Cyclomethicone and amodimethicone are used. Whenever you see some form of these words in a chemical name, you know there is some silicone in it.

#### **Colorants**

Ten years ago, you used to see the abbreviation FD&C in front of many chemical colorants. Today, however, the INCI has adopted a simplified method for naming colors. They just list the color followed by a number (e.g. Yellow 5). This doesn't tell you anything about the chemical composition but you can get the structure by looking it up in the INCI. An alternative naming system is the EU one in which each colorant is assigned a 5-digit chemical index (CI) number. Yellow 5 in the EU is called CI 19140.

#### **Miscellaneous Rules**

There are many other rules that you'll have to learn over time. To give you a flavor here are a few more.

- 1. Water is just called Water. (Not deionized or purified or anything else. Just water)
- 2. Fragrance is called Fragrance no matter what compounds are used to make it. This is changing but for now, it's correct.

  Botanicals use the Latin name of the plant or part plus the term Extract. So, if you use an ingredient taken from the leaf of a lemon, the ingredient is called Citrus Medica Limonum (Lemon) Leaf Extract.

#### **Conclusion**

The naming of raw materials in cosmetics share some characteristics with the IUPAC system you learned in Organic Chemistry. However, there are many differences and for some things it is impossible to determine the chemical structure from just the name. For more information, your best bet is to go to your company's library (or your city's) and take a look at the latest version of the INCI.



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September 16<sup>th</sup> - 18<sup>th</sup> 2015 Disney Yacht Club, Orlando Florida

Authors are invited to submit titles and abstracts of no more than 150 words for papers to be presented in podium format. Submission deadline January 31, 2015. All topics related to Cosmetic Science will be considered for presentation.

#### All abstracts including photo and bio must be submitted to <u>FLSCCSUN@gmail.com</u>

- Jan. 31, 2015 Deadline for Abstract Submission Include Photo and Bio
- March 1, 2015 Presenters/Author Notified
- May 1, 2015 Presentation Agenda Finalized
- June 1, 2015 Preprints, Author Bios & Abstract (min 200 word, max 2 pages including figures)
- August 1, 2015 Final Presentation Received by FL SCC Chapter
- Sept 16 -18th-2015 Sunscreen Symposium Podium Presentation



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