

Competence in Scientific Research and Innovative Solutions for the Future

Dr. Carsten Dietz, Technical Sales Director at Cosphatec GmbH, introduces Cosphaderm® Sodium LAAS: The new all-natural antimicrobial blend

Dr. Carsten Dietz studied Biochemistry at the Johannes Gutenberg University in Mainz, Germany. After being invited to the excellence program of the Max Planck Institute and doing his PhD in collaboration with them, he renowned ETH Zurich in the field of physical chemistry and biochemistry. Additionally, he teaches students from companies like BASF, Merck, Sanofi Aventis, Bayer, Boehringer. Dr. Dietz also worked as a postdoc at the University. In 2013 he joined Cosphatec as Junior R&D/Quality Manager, where he now leads a team as Technical Sales Director.

EURO COSMETICS: *Dr. Dietz, please give us a short overview of your new product.*

Dr. Carsten Dietz: Cosphaderm® Sodium LAAS is a natural blend consisting of two ingredients: Sodium Levulinate and Sodium Anisate. Both are multifunctional cosmetic ingredients with various benefits for the formulation like skin emollience and perfuming or masking effect. The most interesting property is a strong antimicrobial efficiency against bacteria, yeasts and moulds. Furthermore, the three big advantages of this blend are its water-solubility and that it is colourless as well as odourless. With only 1.0 to 1.4 % of Cosphaderm® Sodium LAAS formulators can replace listed and restricted preservatives in all kinds of cosmetic formulations.

EURO COSMETICS: *Levulinic acid and Anisic acid are well known for their antimicrobial effect. What is new about this blend?*

Dr. Carsten Dietz: That is correct. Levulinic acid is known for its strong antimicrobial efficiency against bacteria while Anisic acid is common for its strong performance against yeasts and moulds. The big challenge is always the low water solubility of Anisic acid: To dissolve it in water the pH value has to be increased to form the well soluble salt of Anisic acid and in the end the pH value has to

be decreased below 6.0 because solely the acid has an antimicrobial effect.

The combination of both salts makes the blend much more user-friendly and allows a water solubility with a concentration up to 16 %. Formulators just have to add the blend to the water phase and it completely dissolves within seconds. The effective and recommended dosage of 1.0 to 1.4 % is therefore easily to accomplish during production.

EURO COSMETICS: *If you mix two salts how can you make sure that a separation does not lead to inconsistent antimicrobial effects?*

Dr. Carsten Dietz: The so-called Brazil nut effect or Granular convection can happen if you mix two crystalline substances with different particle sizes. To avoid this, we do not mix the salt crystals, we mix both acids in an aqueous solution and use a spray drying process to produce Cosphaderm® Sodium LAAS. This means that every single crystal consists of both substances, therefore, segregation is impossible.

EURO COSMETICS: *What was your incentive for this invention?*

Dr. Carsten Dietz: The Cosphatec GmbH focuses on the develop-

ment and production of natural and synthetic substances with a strong antimicrobial effect. Every year we are analyzing more than 100 substances but we also want to improve existing products. On one hand new substances are great but on the other hand the further development of well proven raw materials is also beneficial due to the existence of long-term studies.

EURO COSMETICS: *The Cosphaderm® Sodium LAAS is a powder – why are you not offering an aqueous pre-solution of both dissolved salts?*

Dr. Carsten Dietz: Such a product is existing on the market but we desired a real improvement. An easy-to-use product is just one point, the other one is the ecological aspect. If you offer a mixture of both acids it is impossible to dissolve both substances in a high concentration. Furthermore, a polyol is needed to avoid precipitation. If you compare such a liquid product with Cosphaderm® Sodium LAAS you will realise that the transportation costs, storage area and packaging material can be reduced from 100 % to 25 % because you do not have to ship and store a lot of water. An additional point are palm-oil derived substances: Nowadays more and more manufacturers tend to avoid palm-oil derived raw materials

and often polyols belong to this group. Finally, you can protect the environment in several ways.

EURO COSMETICS: *For what kind of formulations is Cosphaderm® Sodium LAAS suitable?*

Dr. Carsten Dietz: There is no limitation. You can use it in typical skin care products like emulsions and lotions, in surfactant-based formulations like shampoos and shower gels, in decorative cosmetics, household products, deodorants and water-based formulations like masks. Cosphaderm® Sodium LAAS is an excellent choice in particular for baby care because both acids are frequently used in cosmetic products which are free of listed preservatives.

EURO COSMETICS: *Is Cosphaderm® Sodium LAAS conform to natural cosmetic labels?*

Dr. Carsten Dietz: Yes, it is. The product is COSMOS-certified and should fulfil the requirements of nearly all known natural cosmetic labels.

EURO COSMETICS: *Thank you for speaking with us.*



Sodium LAAS