# A conversation with Dr. Jane Sum,
## Head of Cosmetics, Covestro

**EURO COSMETICS:** *Dr. Sum, for years, you have been successful with your film formers of the Baycusan® brand. What are your future plans?*

**Dr. Jane Sum:** Film-formers of the Baycusan® brand have established themselves in the market over the last years as "The Beauty Enabler", with hundreds of launched products containing these raw materials in the areas of color cosmetics, skin and sun care as well as hair care. In order to remain successful we will continue our innovation activities, as well as identify and set new trends in a fast-paced industry. An outside-in approach is critical here: we listen to customers, understand market needs and provide solutions which fulfill the requirements.

**EURO COSMETICS:** *At in-cosmetics in London you presented innovative beauty solutions based on polyurethane raw materials of the Baycusan® brand. What exactly?*

**Dr. Jane Sum:** At in-cosmetics in London, we have focused on skin care for mature and sensitive skins and an extra-waterproof sun care. The mature skin puts special demands on daily skin care. To meet them, we have gathered new findings on skin-firming properties based on the film former Baycusan® C 1004, which also acts like an invisible barrier against environmental influences that are often responsible for premature skin ageing.

Besides that we presented a number of developments for sun protection, among them formulations to protect sensitive skin based on Baycusan® C 1000, and long-term sun protection for the beach using Baycusan® C 1004.

**EURO COSMETICS:** *One theme of the exhibition was long-lasting sun protection formulations. What can you tell us about this?*

**Dr. Jane Sum:** On the beach, an effective sun protection is a must, but children and surfers in particular are not happy when their sunscreen washes off after the first swim or play with the sand and needs to be reapplied. We have developed very water-resistant, sweat-resistant and sand-resistant sun care formulations for the beach to suit these requirements. Thanks to our film former Baycusan® C 1004, the sun care formulations retain at least 50 percent of their sun protection factor for more than one hour with repeated exposure to water. Even those who sweat while exercising on the beach can rely on long-lasting protection. In sauna tests, Covestro proved that over 60 percent of the sun protection factor is maintained.



*Dr. Jane Sum, Head of Cosmetics, Covestro*

**EURO COSMETICS:** *And what are the advantages for personal care formulators for sunscreen?*

**Dr. Jane Sum:** Baycusan® polymers are easy-to-formulate with no need of neutralization, and are compatible with broad range of cosmetic ingredients. Covestro provides full toxicology dossiers and inhalation studies. For sun care applications we do run in-vivo studies and claim support for all our formulation guidelines.

Our polymers offer multifunctional benefits such as a high water, saltwater and sweat resistance, rub-off resistance, sand repellence, SPF boosting and excellent aesthetics will help them to achieve "all claims in one product".

They allow formulators to use less UV filters reducing final formulation costs. Baycusan® C 1000 also has the ability to stabilize oil-in-water emulsions, producing more homogenous tighter structure in the emulsion. This co-emulsifying ability also allows for reducing or eliminating the presence of the emulsifiers typically used in sun care products.

**EURO COSMETICS:** *In the choice of sunscreen it is most important how it feels on the skin. Please tell us more about this and your results.*

**Dr. Jane Sum:** Should it be in emulsion-based, ethanol-based or oil-based sunscreens, Baycusan® film formers offer excellent sensory properties. Sun care products are easy-to-apply and absorb quickly.

The excellent breathability of Baycusan® polymers keeps skin oxygenated and therefore well-suited to protect people from sun when exercising. Their outstanding film elasticity best mimics the skin and provides great skin comfort.

Furthermore face sun care products formulated with Baycusan® C 1000 would less run into the eyes.

Long-term sun care products containing Baycusan® C 1004 film former are not sticky, and sand does not adhere to it. Thus children won´t complain about that unpleasant, itchy feeling. Covestro demonstrated these results using a method developed in-house: Up to 25 percent less sand adhered to the substrate when treated with



sun protection formulations containing Baycusan® C 1004 than with samples without the film-former.
Sun protective oils formulated with Baycusan® C 2000 feel pleasantly dry on the skin.

**EURO COSMETICS:** *For which type of skin is Baycusan® C 1000 suitable?*
**Dr. Jane Sum:** It is best suitable for sensitive skin. Conventional formulations can irritate the eyes when the UV absorber migrates to the skin surface. Sun protection products containing Baycusan® C 1000 reduce the migration of UV absorbers to the skin´s surface by up to 80 percent.
Another advantage of Baycusan® C 1000 in sun care is its ability to stabilize oil-in-water emulsions, producing more homogenous tighter structures in the emulsion. This co-emulsifying ability also allows for reducing or eliminating the presence of the emulsifiers typically used in sun care products. Hence, with Baycusan® C 1000 it is possible to achieve a combination of high performance sun protection products with light feel, suitable for sensitive skin and babies.

**EURO COSMETICS:** *And what is the special feature about the new, ethanol-based polyurethane film-former Baycusan® C 2000?*
**Dr. Jane Sum:** Consumers want highly effective and convenient sun protection products that display good (salt) water and sweat resistance, and form a transparent film even on wet skin. With the latest film former Baycusan® C 2000, we have developed precisely the right product to meet these requirements and develop high-performing ethanol-based sun sprays. Furthermore, even without the further addition of ethanol, sun protection oils formulated with this ethanol-based film-former feel pleasantly dry on the skin.

**EURO COSMETICS:** *How do you envision the future of sun care?*
**Dr. Jane Sum:** Our sun care formulations showcased at the in-cosmetics fair in London indicate that an effective sun protection is by far not enough.
Consumers want daily sun protection products which do not irritate the skin or the eyes, and are suitable for use on sensitive skin. They also need to be long-lasting; in particular, they should display a high (salt) water resistance sweat and rub-off resistance. The sun protection factor should remain after sand application or after rubbing with a towel. I believe that non-transfer of sunscreens on textile would also be a topic.
Product launches with new textures such as transparent sprays, gels and oils will continuously be improved with regard to convenience and skin feeling.
Furthermore it is essential that the formulations are easy to apply, that they absorb quickly and that the skin is not sticky after application. I am pretty sure that in the future sun care products will have to satisfy a whole range of requirements from consumers and formulators, in addition to offering a comprehensive protection against harmful UV radiation.

**EURO COSMETICS:** *Thank you for the conversation.*

