

Care in the Sun



Even in the wintertime, prioritising sun care is essential. Whether we're formulating a new sun care product in the lab for the upcoming season, escaping the cold for a holiday abroad, or simply safeguarding our skin from the winter sun, it's no secret that excessive sun exposure can damage our skin. Too much ultraviolet radiation from the sun has been associated with premature ageing, increased wrinkle formation, and an elevated risk of skin cancer.



(Source: New England Journal of Medicine)

A picture featured in a New England Journal of Medicine issue illustrates the extent of damage that sun exposure can inflict on a person's skin.

The 69-year-old trucker, pictured left, has been on the road for 28 years. The damaged skin on the left side of his face is a testament to years of accumulated exposure to ultraviolet A (UVA) radiation. Due to the nature of his job, only one side of his face was regularly exposed to the sun. This contrast shows how different his entire face could have looked if he had consistently worn sunscreen. It's a powerful reminder to apply SPF to protect your skin.

The formulation of sun care products can be complex, and one thing that helps is having highly effective and suitable raw materials at hand. The following shows **RAHN's Care in the Sun** guide:

After Sun Care: Aloe Up

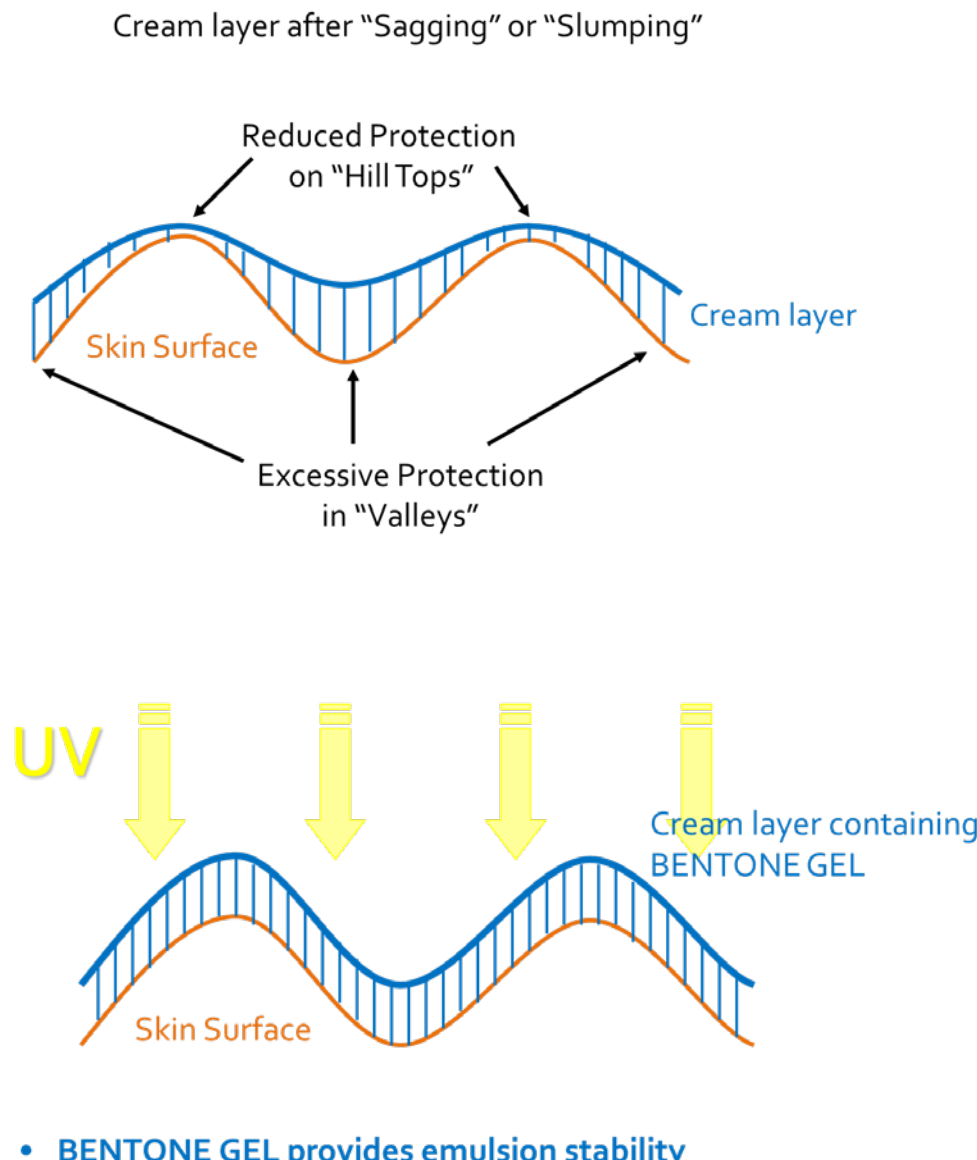
Aloe vera has long been recognised as a natural wonder for sun-stressed skin. This remarkable plant is rich in vitamins, minerals, amino acids and antioxidants. It acts as a cooling oasis on the skin, soothing sunburn or skin irritation after a day in the sun.

"Soothe & moisturise with aloe vera"

The benefits of aloe vera in after-sun products are extensive:

- Moisturises: Aloe vera moisturises the skin and helps to maintain its hydration
- Soothes: It reduces inflammation and calms the skin after excessive sun exposure
- Protects and repairs: Aloe vera contains compounds that promote skin regeneration and accelerate the repair of sun damage

As such, aloe vera is an essential ingredient in after-sun products to ensure optimal skincare and recovery after a day in the sun.



- **BENTONE GEL provides emulsion stability**
 - Keep a uniform layer on the skin surface for an even spread and protection

*Only available for clients in AT, CH, DE and UK

BENTONE** – Hectorite technology for today's sun care formulations

Hectorites find widespread use in both O/W and W/O emulsions. They optimise heat stability and deliver a powdery, lightweight finish. Additionally, hectorites ensure excellent dispersion of mineral sunscreens or pigments. Bentone® hectorite clay technology has proven to be suitable for a variety of sun care formulations. It is easily incorporated into both cold and heated formulation processes.

Recognising the pivotal role of formulation rheology in SPF effectiveness, we turn to Hectorite technology. It stands as a proven catalyst, enhancing sun care formulations by providing the essential rheology for a uniform delivery of actives in a continuous, protective film.

"Formulators may achieve enhanced SPF values and SPF water resistance"

Unlike traditional formulas that often break on the skin, leaving areas of low and high coverage, the incorporation of hectorites introduces a thixotropic system, ensuring a consistently uniform application. Elevate your sun care experience with Hectorites – your key to a flawless shield against the sun's rays.

Discover the wide ELEMENTIS product range of BENTONE HYDROCLAY™, BENTONE GEL® and BENTONE® LUXE.

CELLIGENT® – Discover the secret of stopping epidermal jetlag®

Prolonged exposure to sunlight corresponds to an increase of Reactive Oxygen Species (ROS) accumulation in the skin cells, which is the biggest threat to the proper calibration of the epidermal biorhythm. Epidermal Jetlag® can occur when the ROS load in the skin exceeds what can be handled by the repair mechanisms of the cells.

"Sunscreens themselves can also cause increased ROS"

To avoid this, CELLIGENT® is the perfect solution to add to a sunscreen product. It is composed of a pool of strong antioxidants, ethyl ferulate and carnosic acid, which synergistically act as ROS-scavengers. Therefore, it alleviates the symptoms of Epidermal Jetlag® and promotes recovery from UV-related damage and light-induced stress.

INCI: Helianthus Annuus (Sunflower) Seed Oil, Ethyl Ferulate, Rosmarinus Officinalis (Rosemary) Leaf Extract, Tocopherol

Recommended Use: 0.5 – 3.0%



*Only available for clients in AT, CH, DE, IE and UK

Eldew® SL-205* – The power of amino acids for superior sun protection

Eldew® SL-205 is a versatile, highly polar amino acid-based emollient that meets the demand for multifunctional solutions.

"Excellent dissolving ability"

This non-greasy, non-sticky emollient ensures even distribution of UV filters and pigments, enhancing product performance.

What sets Eldew® SL-205 apart?

- Excellent solubiliser for crystalline organic UV filters (especially Ethylhexyl Triazone)
- Aids in the dispersion of pigments and UV filters (improving SPF)
- Provides a light, pleasant skin feel comparable to silicone

Learn more about the capabilities of Eldew® SL-205 in the technical documentation.

INCI: Isopropyl Lauroyl Sarcosinate

Recommended Use: 2 – 10%

RADICARE®-ECO – Discover the secret of urban stress prevention

Not only skin but also hair and scalp should be included in a sun protection concept. In addition to the most common mechanical and chemical stressors, hair and scalp are also exposed daily to ever-increasing air pollution and the impact of UV irradiation. Long-term exposure to particulate matter and solar irradiation is known to induce chemical damage to both hair and scalp because of the toxic and oxidising pollutants that become attached to them.

"Both hair and scalp need a sun protection concept"

RADICARE®-ECO is based on extracts of a medicinal plant with well-known calming effects – lemon balm (*Melissa officinalis*) – and tender young shoots of barley grass (*Hordeum distichon*) as well as bio-technologically produced α-glucosyl hesperidin. It is able to form a non-occlusive shield against urban pollution and protects hair and scalp against environmental stress.

INCI: Water, Glucosyl Hesperidin, Melissa Officinalis Leaf Extract, Sodium Benzoate, Hordeum Distichon (Barley) Extract, Citric Acid

Recommended Use: 0.2 – 2.0%



RADICARE®-GOLD – Discover the secret of natural radical protection

Taking inspiration from nature helps to not reinvent the wheel: the freshwater algae *Tetrademus obliquus*, naturally rich in β-carotene, lutein and tocopherol, is equipped with a full lipid antioxidant system. This is the perfect natural shield against radiation such as Wi-Fi and blue light and effectively combats the effects of the reactive oxygen species caused by these and UV light.

"The all-round protection for the skin"

RADICARE®-GOLD can replenish the skin's natural carotenoid depot to protect against the effects of blue light. It protects against lipid peroxidation, strengthens the skin barrier and ensures that the skin is elastic and smooth.

INCI: Crambe Abyssinica Seed Oil, Beta-Carotene, Xanthophylls, Tocopherol, Helianthus Annuus (Sunflower) Seed Oil, Rosmarinus Officinalis (Rosemary) Leaf Extract

Recommended Use: 1 – 5%

Sisterna® SP 70-C & SP30-C* – Mild sucrose esters for sun care

Sucrose Stearates are widely used for their versatile properties. As emulsifiers, they play a crucial role in creating stable formulations, by effectively blending water and oil-based ingredients in products such as lotions, creams, and moisturisers. Their stabilising capabilities prevent product separation and improve texture and consistency.

"Providing an exceptional skin-feel"

Additionally, Sucrose Stearate acts as an emollient, imparting a smooth, velvety feel to the skin. Its non-irritating nature makes it suitable for sensitive skin products. Furthermore, Sisterna's emulsifiers not only help reduce stickiness but also enhance the spreadability, absorption, and smoothness of cosmetic products. This ensures a pleasant user experience and contributes to the overall quality and effectiveness of the formulations.

Experience sun protection as light as never before. Unwanted sensory effects caused by UV filters are a bust.

INCI: SP70-C: Sucrose Stearate / SP30-C: Sucrose Distearate

Recommended Use: 1 – 3%



*Only available for clients in AT, CH, DE, IE and UK



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Synoxyl® AZ* – Prevention & repair of skin damage after sun exposure

Synoxyl® AZ is a powerful, photostable antioxidant that protects against sun-related skin damage and promotes the regeneration of sun-exposed skin.

"Synoxyl® AZ is a multi-targeted molecule"

It offers the ideal combination of properties for sun care products:

- High photostability: compared to conventional antioxidants, Synoxyl® AZ remains stable when exposed to heat and light
- Reliable skin protection: Synoxyl® AZ prevents the formation of cyclobutene-pyrimidine dimers (CPDs) and actively combats UV-induced DNA damage

Learn more about skin protection and sun care formulations with Synoxyl® AZ in the technical documentation.

INCI: Acetyl Zingerone

Recommended Use: 0.5 – 1%