



Invisible Aging

Caring Concepts for Every Day

SunCare

 **BASF**

The Chemical Company

Efficient SunCare for Invisible Aging

In today's world, the borders between sun and skin care products increasingly merge. An efficient sun care product has to provide effects beyond pure protection from UV radiation.

Every day sun care should consist of efficient sun protection, prevention and neutralization of free radicals, soothing and repair. These components should be key for all products regardless if they are sun protection, after sun or daily care.

BASF offers a large portfolio of cosmetics ingredients including UV filters, and highly efficient antioxidants and soothing actives enabling a wide variety of formulations for sun care and after sun products.

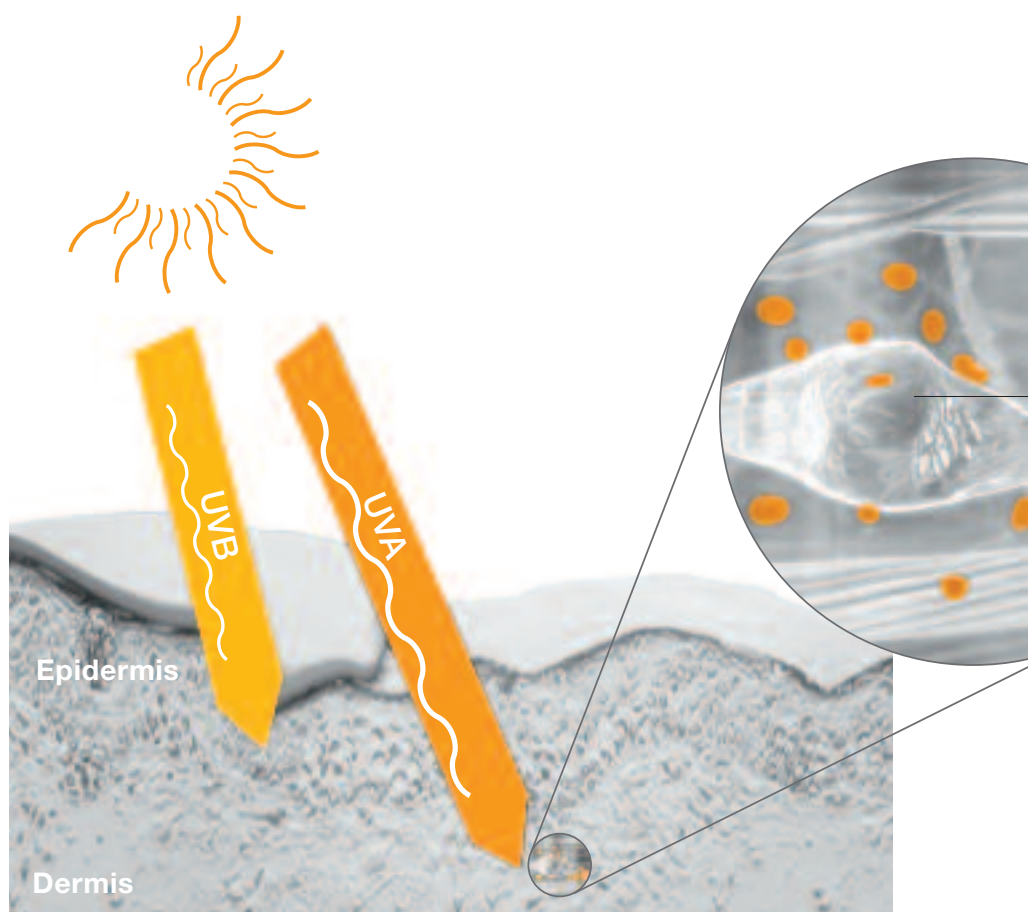
The special importance of high-performance, long-lasting UV protection

Adequate UV protection is essential to prevent UV-induced skin damage, including photo-aging, sunburn, and photo carcinogenesis.

Whereas UVB radiation is a major contributor to sunburn and DNA damage, the role of UVA radiation is now widely accepted as one of the major causes in the generation of free radicals in the skin. The effects become evident only after years of repeated exposure to even low UV doses.

Modern sun care products therefore should be formulated with a well balanced UV protection addressing both UVB and UVA protection.

EFFECTS OF UVB AND UVA RADIATION ON SKIN



Recent studies have shown that Uvinul® A Plus Granular is the most efficient UV filter for the prevention of free radical formation.*

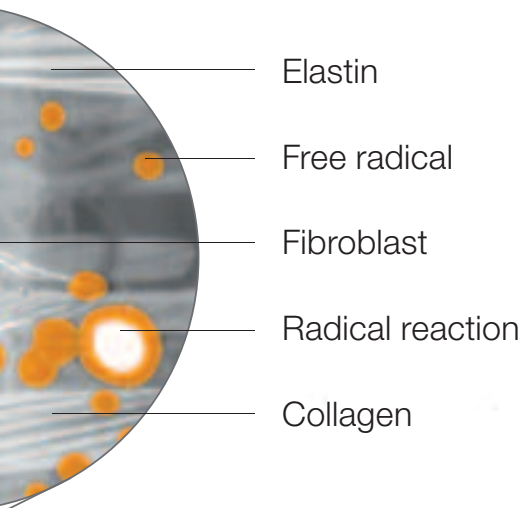
* "Strategy for Efficient Prevention from Photo-Ageing"
SOFW Journal 134/8-2008

The Causes and Signs of Skin Aging

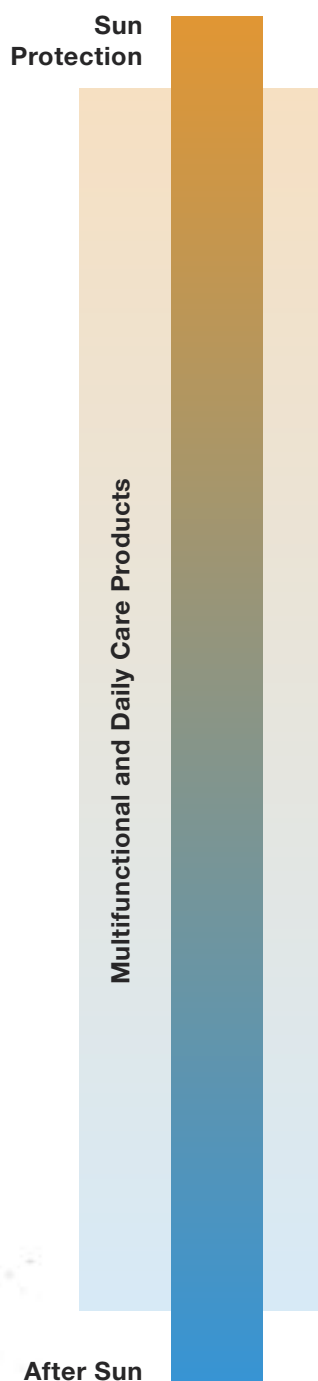
Although it is impossible to stop aging, there are many things we can do to alleviate the impact of age on our bodies. Skin aging in particular is a complex biological process caused by multiple interdependent factors.

Visible signs of skin damage and aging are:

- **Inflammatory reactions:** UVB overexposure results in erythema formation which is perceived as inflammatory skin reaction. UVA-induced free radicals and ROS lead to lipid peroxidation and the release of pro-inflammatory cytokines (interleukins, prostaglandins, leukotrienes) resulting in inflammatory reactions such as redness and sunburn.
- **Irregular pigmentation:** With increasing age and UV-exposure, the distribution of melanocytes, producing the melanin pigment, becomes irregular and clustered. Hyper-pigmented zones, i.e. age spots, appear.
- **Loss in skin firmness and elasticity:** UVA rays penetrate down into the dermis and harm components such as collagen and elastin. The result is loss in skin firmness and elasticity and ultimately the formation of wrinkles.
- **Skin cancer:** UV radiation is carcinogenic. It can modify nucleic acids (DNA & RNA) directly (UVB) by cross-linking DNA or indirectly (UVB, UVA) via radiation-induced reactive oxygen species (ROS).



Invisible Aging with BASF UV Filters and Active Ingredients



1

UVA, UVB and Broad-spectrum filters have been developed to ensure safe and effective photo-protection across the whole UV range.

Use a combination of **Uvinul®** and **Tinosorb®** UV filters in order to

- achieve optimal balanced and long lasting UV protection
- minimize the amount of UV rays reaching the skin
- reduce the amount of free radicals formed in the skin
- prevent DNA damage and photo-aging

2

Active Ingredients and Vitamins such as Vitamin C and E and their esters have been developed to neutralize free radicals formed in the skin.

Include antioxidants, particularly the combination of Sodium Ascorbyl Phosphate (SAP) and Vitamin E Acetate in order to

- reduce oxidative damage
- improve elasticity and smoothness of the skin
- promote collagen formation
- prevent hyper-pigmentation and keratosis
- protect skin and membrane lipids

3

Soothing Actives such as Bisabolol and Panthenol have been developed to calm down the perturbed physiological processes in the skin.

It's best to use a combination of both in order to

- soothe inflammatory reactions (e.g. redness)
- stimulate epithelisation
- facilitate skin repair and improve hydration

4

The Renewing Active Retinol has been developed to improve the cell renewal process and thus to reduce the visible symptoms of aging. It counteracts the degradation and is thereby the most effective substance for the care of aging and UV-damaged skin.

Include Retinol into your daily care and after sun formulations in order to

- increase enzyme activity
- normalize keratinisation
- reduce collagen degeneration
- erase the effects of aging

Invisible Aging means to us:

... healthier aging and thereby beautiful aging ...

Uvinul® and Tinosorb® UV Filters
protect the skin against excessive UV radiation, preventing photo-aging and skin damage



reduce the risk of age spots, wrinkles and skin cancer

Sodium Ascorbyl Phosphate and Vitamin E Acetate
reduce oxidative damage and promote collagen formation



improve skin elasticity and smoothness, and prevent hyper-pigmentation

Bisabolol and Panthenol
soothe inflammatory reactions and facilitate skin repair and hydration



improve skin moisturization and reduce redness

Retinol
improves cell renewal, reduces collagen degradation and normalizes keratinisation



regenerates skin and provides a smooth, firm and radiant look

... for every day

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Personal Care Ingredients

BASF offers one of the most comprehensive ingredients portfolio in the personal care industry. It is designed to meet the customers' needs in the HairCare, SunCare, SkinCare, ColorCare, BodyCare and OralCare markets. The high quality product range includes e. g. polymers, UV filters, effect pigments, actives, hair dyes and surfactants. BASF constantly strives to anticipate the requirements of the personal care market and creates innovative products for the sustainable development of the industry.

Safety

We know of no ill effects that could have resulted from using our products for the purpose for which they are intended and from processing them in accordance with current practice. According to the experience we have gained up to now and other information at our disposal, our products do not exert any harmful effects on health, provided that they are used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our safety data sheet are observed.

Labeling

Details about the classification and labeling of our products and further advice on safe handling are contained in the current safety data sheets.

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