Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
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TECHNICAL DATA SHEET

Product Name: Homosalate

INCI name: Homosalate

CAS: 118-56-9

Chemical category: Salicylic acid ester (salicylate UV filter)

Functional categories: UVB filter; skin protection ingredient against UV radiation

IUPAC name: 3,3,5-trimethylcyclohexyl 2-hydroxybenzoate

Description: Homosalate is an organic UVB filter used in cosmetic formulations as a lipophilic active ingredient for protecting the skin from solar radiation. It belongs to the salicylate group and functions by selectively absorbing UVB radiation, primarily in the 295–315 nm range, thereby reducing the amount of energy reaching the upper layers of the skin. After absorption, the energy is converted into harmless heat, preventing erythema and acute photo-oxidative skin damage. Due to its oily nature, Homosalate is easily incorporated into the oil phase of emulsions, as well as into anhydrous formulations such as sunscreens, balms, and sticks. It contributes to good spreadability and a pleasant sensory profile without stickiness, making it suitable for formulations intended for daily use. It is often combined with other UV filters to achieve broader and more stable protection, as it does not provide full-spectrum UV protection on its own. From a formulation standpoint, Homosalate shows good compatibility with most emollients, esters, and silicones, and its chemical stability allows it to maintain effectiveness throughout the product shelf life. However, due to its lipophilicity, it can penetrate the upper layers of the skin, which has led to regulatory limitations on its concentration in certain jurisdictions. At permitted concentrations, it is considered an effective and technologically valuable UV filter, especially in products where good cosmetic acceptability and uniform skin distribution are priorities.

Physicochemical properties: Homosalate is a clear to slightly yellowish oily liquid with low volatility. At room temperature, it remains liquid with a relatively low solidification point, enabling easy handling and incorporation into formulations without the need for additional heating.

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It is practically insoluble in water but shows very good solubility in vegetable oils, ester emollients, fatty alcohols, and silicones, making it compatible with a wide range of oil phases. It is chemically stable in neutral to slightly acidic pH ranges typical of skin care products, without a pronounced tendency toward hydrolysis under normal cosmetic conditions. It is not fully photostable on its own, but when combined with other UV filters and stabilizing components, it retains satisfactory functionality during sun exposure. Its lipophilic nature contributes to even spreading on the skin and the formation of a uniform, continuous protective film. From a sensory perspective, it has low stickiness and does not leave a heavy or greasy feel on the skin. It has no pronounced odor and does not significantly affect the fragrance profile of the formulation. Due to its chemical structure and molecular weight, it shows affinity for the stratum corneum but is used within defined safety limits, ensuring predictable behavior and stable performance in finished products.

Benefits:

- Absorbs UVB radiation and helps protect the skin from sunburn.
- Enables effective UV protection with a pleasant cosmetic feel.
- Improves spreadability and contributes to uniform product application.
- Does not leave a heavy, greasy, or sticky residue on the skin.
- Easily integrates into the oil phase and is compatible with most emollients and silicones.
- Provides formulation flexibility due to effective combination with other UV filters.
- Does not significantly affect product odor or fragrance profile.

Method of use: Homosalate is used as a lipophilic UVB filter and is incorporated exclusively into the oil phase of formulations. It is added during preparation of the oil phase, with mild heating if necessary, to ensure complete homogenization and uniform distribution. After emulsification with the water phase, it forms a stable system without affecting the clarity of oil-based or W/O systems. In sunscreen emulsions (creams, lotions, milks), Homosalate is typically used at concentrations of 5–10%, where it significantly contributes to UVB protection and SPF enhancement. In sprays and oil-based sunscreens, typical concentrations range from 5 to 7.5%, providing good sensory acceptability and even application.

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In SPF lip balms, it is used at 3–7%, depending on the targeted SPF and combination with other UV filters. In daily creams and BB/CC products with moderate SPF, it is usually used at lower concentrations, typically 1–5%, as a supporting UVB filter in combined protection systems. Homosalate is most often combined with other UVB and UVA filters to achieve broad-spectrum protection and improved SPF stability, without negatively affecting texture or causing formulation turbidity.

Combinations with other UV filters:

Homosalate + Octocrylene
Homosalate 5–10% + Octocrylene 5–10%
Provides strong UVB protection and improves photostability, with good compatibility in emulsions and oil-based formulations.

Homosalate + Ethylhexyl Methoxycinnamate (Octinoxate)
Homosalate 5–10% + Octinoxate 5–7.5%
Used to achieve high UVB protection, especially in classic sunscreen creams and lotions.

Homosalate + Butyl Methoxydibenzoylmethane (Avobenzone)
Homosalate 5–10% + Avobenzone 2–3%
Provides UVB + UVA protection, where Homosalate contributes to SPF and Avobenzone covers the UVA spectrum.

Homosalate + Octocrylene + Avobenzone
Homosalate 5–10% + Octocrylene 5–10% + Avobenzone 2–3%
One of the most common broad-spectrum combinations in EU formulations, with good photostability and high SPF potential.

Homosalate + Diethylamino Hydroxybenzoyl Hexyl Benzoate (DHHB)
Homosalate 5–10% + DHHB 5–7%
Combination of a UVB filter and a stable UVA filter, suitable for modern emulsions with enhanced UVA balance.

Homosalate + Ethylhexyl Triazone
Homosalate 5–10% + Ethylhexyl Triazone 1–3%
Provides very high UVB performance with relatively lower total filter load.

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Homosalate + Bisoctrizole (Tinosorb M)
Homosalate 5–10% + Bisoctrizole 2–10%
Combination of organic and hybrid filters for high and long-lasting protection, with good coverage across the full UV spectrum.

Animal testing: In accordance with current European regulation (Regulation (EC) No. 1223/2009 on cosmetic products), the substance has not been tested on animals. The safety assessment is based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). “In silico” refers to methods performed using computer models and simulations rather than on living organisms (in vivo) or cell cultures (in vitro). This statement confirms compliance with the ban on animal testing and is provided for informational purposes regarding the use of the raw material in cosmetic formulations.

GMO: Not GMO

Vegan: Does not contain components of animal origin