

## TECHNICAL DATA SHEET

**Product name:** Salicylic Acid (extra pure)

**INCI name:** Salicylic Acid

**CAS:** 69-72-7

**Chemical classification:** Phenol; Carboxylic acid/derivatives

**Structural formula:** IUPAC: 2-Hydroxybenzoic acid

**Functional category:** Skin and hair care agent; exfoliant; anti-dandruff agent; acne treatment; denaturant

**Country of origin:** China

**Description:** Appears as colorless crystals. The molecular weight is approximately 138.12 g/mol. It has a relatively low melting point, around 159 °C. It has a characteristic odor often described as similar to the scent of methyl salicylate (wintergreen smell). It is poorly soluble in water with a pKa value of about 2.97. It forms aqueous solutions with acidic pH values. Solubility: water, about 0.2% at 20°C, about 1.7% at 75°C (adding about 5% sodium phosphate or another neutral salt increases solubility in water to about 1.8%); alcohol (ethanol), about 14% in pure ethanol, about 0.5% in 20% ethanol; propylene glycol, about 3-6%; glycerin, about 1.6%. Salicylic acid salts (sodium salicylate) and esters (most up to C16 ester of salicylic acid) have weaker effects on the skin than salicylic acid. Salicylic acid is very widespread in nature, but today it is mostly produced synthetically.

### Benefits:

- **Acne treatment:** Salicylic acid is highly effective in treating acne due to its ability to penetrate pores and exfoliate the skin. It helps clear pores, remove dead skin cells, and reduce the appearance of blackheads and pimples.
- **Exfoliation:** Salicylic acid promotes the removal of dead skin cells, making the skin smooth and radiant. It can improve skin texture, reduce the appearance of fine lines and wrinkles, and even out skin tone.
- **Oil control:** Helps regulate sebum secretion by reducing oil production, which

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can help prevent pore clogging and acne outbreaks.

- **Anti-inflammatory properties:** Has anti-inflammatory properties that can soothe irritated skin. It can help reduce redness, swelling, and overall skin inflammation.

- **Hyperpigmentation treatment:** Salicylic acid can help lighten dark spots and hyperpigmentation caused by acne scars or sun damage. Regular use can help lighten these discolorations and achieve a more even skin tone.

- **Improved product absorption:** Salicylic acid has the ability to enhance the absorption of other skincare ingredients. When used in combination with other active ingredients, it can help those ingredients penetrate deeper into the skin, increasing their effectiveness.

- **Antibacterial action:** While not its primary mechanism of action, salicylic acid can have a limited antibacterial effect against bacteria that may contribute to acne development, such as *Cutibacterium acnes* (formerly known as *Propionibacterium acnes*).

**Usage:** Most commonly used in concentrations of 0.5 - 3%, where the pH range of the product is from 3 to 4. It has been shown that the effectiveness of skincare products with salicylic acid depends on the availability of free (non-ionized) salicylic acid, which is lower if the product contains a buffer and has a higher pH. In molecular form, it diffuses through the hydrophobic epidermal barrier of the skin, while the ionized form (e.g., sodium salicylate), which is hydrosoluble, barely penetrates the epidermis.

**Application:** Salicylic acid is used in cosmetics for its keratolytic and anti-inflammatory properties. Its ability to penetrate pores and regulate sebum production makes it ideal in the fight against acne and improving skin texture. It is used in the manufacture of acne products, mattifying products, anti-dandruff shampoos, and as part of cosmetic treatments for pore cleansing and wart removal. Sun protection is mandatory, as salicylic acid can increase skin sensitivity to sunlight. The use of salicylic acid in cosmetic products can bring significant benefits to the skin, but it is important to be aware of potential irritations and use it carefully, taking into account the specific needs and sensitivity of the skin. It is effective against wrinkles (anti-aging preparations) up to 1.5% in U/V creams. If used in concentrations greater than 2%, octyldodecanol or propylene glycol should be used as a solvent. It can also be added in powder to finished creams or lotions without dissolving in water.

**Precautions:** It is necessary to measure the pH value after adding salicylic acid because

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it significantly lowers the pH value of the product. pH lower than 3.5 should be avoided, as it may cause skin irritation. To avoid excessive peeling of the skin, care should be taken when used simultaneously with abrasive soap or cleansing products containing other acids, products containing alcohol, and cosmetic products that dry out the skin.

**Source materials from which it is derived:** Sodium phenoxide and carbon dioxide.

**Animal testing:** The substance has not been tested on animals

**GMO:** Not GMO

**Vegan:** Does not contain components of animal origin

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