

## SalSphere® Salicylic Acid (SA)

8248

*Rejuvenate and Restore Your Skin*


SalSphere® Salicylic Acid (SA) is a time release delivery system of salicylic acid (SA). This hydroxy acid is a key ingredient in many skincare products for of dermatitis, acne, psoriasis, and more.

SA works as a keratolytic, comedolytic, and bacteriostatic agent, causing the cells of the epidermis to shed more readily, opening clogged pores, and neutralizing bacteria within.

SA is a white crystalline powder and poorly soluble in water (2g/L at 20°C). However, it is soluble in organic solvents that are not skin friendly (i.e. acetone, ether, alcohol, and chloroform-benzene), making it a challenge for formulation of topical skin applications.

### Unique Advantages

- 1. Formulation-Ready-** SS SA makes this poorly-soluble ingredient easy to use in alcohol-free formulations. SS SA enables formulation of SA in rinse-off and leave-on formulations for acne, exfoliation, dandruff, wart removal, and more.
- 2. Skin-Friendly:** Keeps the pH level in a skin-friendly range. This helps avoid dry skin and irritation.
- 3. Time Release:** Sustained release of SA over time allows for effective, long-lasting, and non-irritating delivery, making it suitable for consumers with sensitive skin.

### Technology

SS SA is composed of sub-micron spheres (Figure 1), in which SA is encapsulated. The mechanism of release is based on adhesion of the sphere to the lipid domains on the pimple and the slow release of SA (Figure 2).

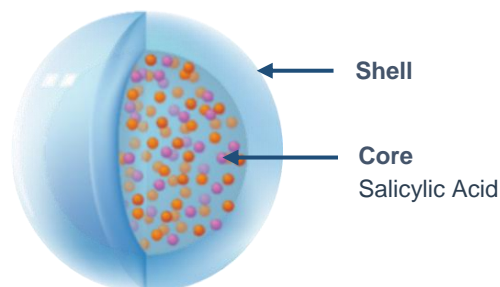


Figure 1: The sub-micron structure of SS SA.

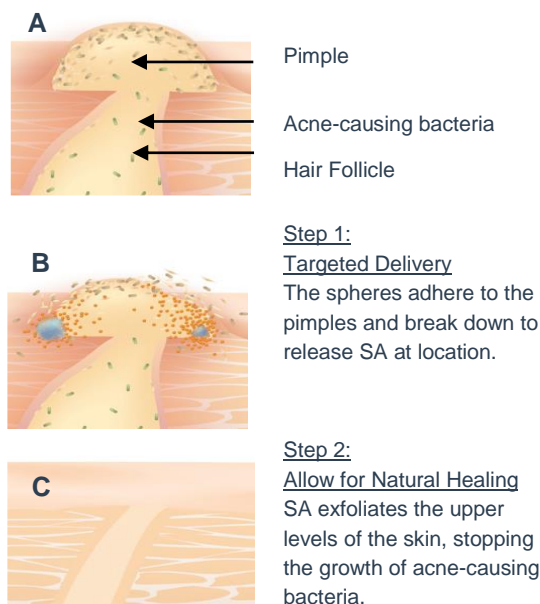


Figure 2: SS SA method of action

### Suitable for Sensitive Skin

Delivering the SA in this controlled fashion allows the skin to maintain a 4.5-5.5, which is considered safe (Figure 3).

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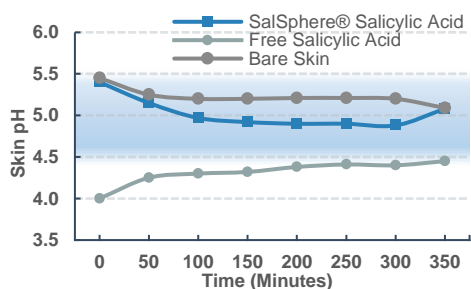
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Figure 3: Skin pH stays above 5 after treatment with SalSphere® technology, while free SA causes the skin pH to drop below 4.5, meaning greater potential for irritation and dryness. The pH was tested with Hanna HI 99181 skin pH meter.



### Formulation: Anti-Acne Lotion

SS SA provides an effective skin therapy without irritating the skin. The following is a suggested formula using a Salvona pre-mix.

Ingredient	(W/W%)
SalSphere® Salicylic Acid	6.67
Salvona Pre-Mix C #5068	25
DI Water	67.33
Preservative	1

### Long-Lasting on Skin

The percent difference of SA remaining on skin from a lotion containing SS SA was compared to free SA (Figure 4).

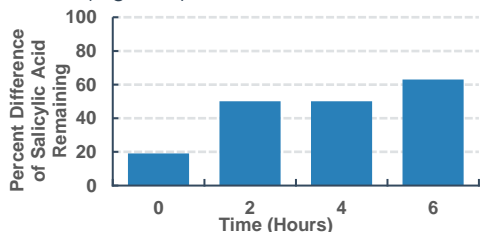


Figure 4: Percent difference of SS SA left on skin as compared to free salicylic acid.

This study shows that SS SA is effective at retaining more SA on the skin, thus enhancing efficacy. The technology provides a combination of safety, skin-friendliness, and efficacy.

### Applications for Better Skin

**Chemical Peels:** SS SA is used for chemical peel procedures with levels of 20 and 30% SA. Chemical peels are helpful for a variety of skin conditions and reduce the dead skin and debris that result in blackheads, whiteheads, and acne.

**Warts:** A wart is a small, rough growth of a solid blister. Topical treatments containing SA are very effective.

### Specifications

<b>Appearance @ 20°C</b>	Translucent liquid
<b>Applications</b>	Cleansers, lotions, and creams, foot care (warts)
<b>Color</b>	Light to dark amber
<b>Odor</b>	Characteristic
<b>pH (Neat)</b>	5.5 ± 1
<b>SA Assay (HPLC) (Wt. %)</b>	30 ± 3
<b>Shelf Life (Months)</b>	36
<b>Usage Level (Wt. %)</b>	Cosmetic: Up to 1.67 OTC: 1.67 - 6.67 Rx: Over 6.67
<b>Storage (°C)</b>	Closed container, at 12-32

\*Salvona's production facility is cGMP compliant.