



# SalSphere® SalCool (SS SC)

Technology that provides a long-lasting and odorless cooling sensation through a proprietary, encapsulated blend of non-menthol cooling ingredients.

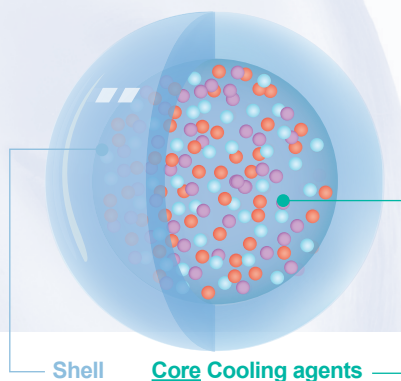


Figure 1: The sub-micron structure of SS SC with the three cooling actives infused within the core.



## UNIQUE FEATURES

- 1 QUALITY SENSORY EXPERIENCE**  
Cooling agents provide users with a refreshing sensation that, in addition to making them feel renewed, serves as an indicator that a product is working.
- 2 PERCEPTION OF FRESHNESS WITHOUT THE NEGATIVES**  
The SalSphere® technology provides the perception of freshness without physically dropping the temperature of skin, and without the menthol odor that is common in cooling products.
- 3 SLOW RELEASE DELIVERY SYSTEM**  
Delivers cooling agents over a longer period of time, allowing for longer-lasting cooling.

## HOW THE TECHNOLOGY HELPS YOU

SS SC in an encapsulation technology comprised of sub-micron spheres that facilitate enhanced delivery of the functional ingredients to the sensory nerve endings in the epidermal layer (Figure 1, 2). The hydrophobic core enables slow and long-lasting release of the functional ingredients.

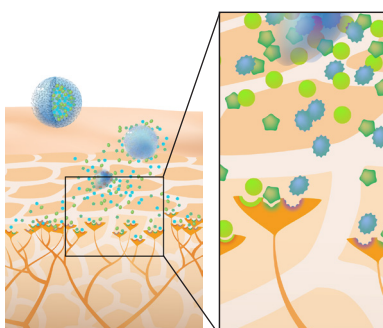



Figure 3: Skin diagram illustrating the mechanism in which SS SC stimulates the different sensory nerve endings (inset) in a non-competitive manner in order to yield a long-lasting cooling sensation.

-   
**1 Skin care**
-   
**2 Sun care lotion**
-   
**3 Hair care**

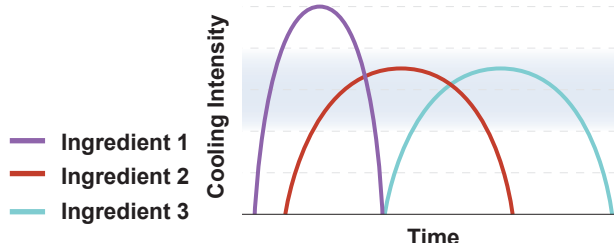
# SalSphere® SalCool (SS SC)

Technology that provides a fresh, cooling sensation through a proprietary, encapsulated blend of non-menthol cooling ingredients.

CONTINUOUS COOLING PERFORMANCE

Each of the three cooling agents in SS SC has a different role and feature in terms of lag time and performance time. The release kinetics of the three ingredients are optimized and synchronized to result in a long-lasting and enhanced refreshing experience (Figure 3).

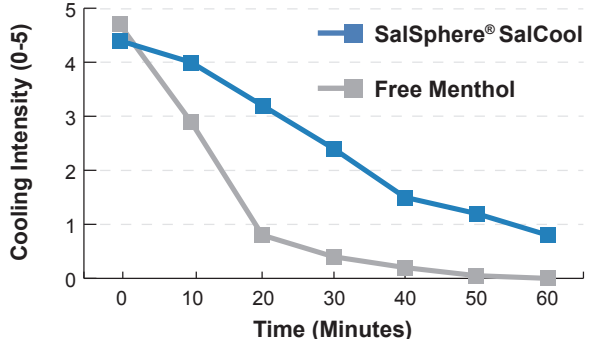
**Figure 3:** Illustration of the consecutive action and perception of sensation from the SS SC ingredients. Ingredient 1 works quickly and with high sensitivity, but the sensation lasts for a short period of time. Ingredients 2 and 3 have a delay before they stimulate a sensation, but perform over a longer period of time. By combining the three ingredients in a proprietary blend, the consumer is able to experience a long-lasting refreshing sensation.



PERCEIVABLE PERFORMANCE ON SKIN

In a consumer perception test, an aftershave balm containing 1% SS SC was compared to an aftershave balm containing free menthol at 1% loading (Figure 4). The volunteers evaluated the intensity and duration of the cooling sensation over an hour. Cooling intensity was measured on a scale of 0-5, with 5 being the strongest cooling perceived.

The results show that the SS SC outperforms the free menthol throughout the hour. The technology provides a strong refreshing sensation upon application that lasts for approximately 50 minutes. The free menthol, on the other hand, is virtually no longer perceivable after just 20 minutes. SS SC is a suitable substitute for menthol, especially when formulating alcohol-free and skin-friendly refreshing products for the face and other sensitive areas.



**Figure 4:** Consumer perception test comparing the cooling intensity of 1% SS SC in an aftershave balm to 1% free menthol in an aftershave balm over one hour.

ENDLESS POSSIBILITIES

SS SC utilizes a proprietary blend of cooling ingredients that is odorless, long-lasting, skin-friendly, and compatible with water-based formulations. The technology can be incorporated into various applications, including skin, lip, scalp, and hair care to provide a refreshing sensation. It can also be combined with analgesic products to help convey the pain relief effect.

FORMULATION

Ingredients	(W/W %)
SalSphere® SalCool	5
Salvona Pre-Mix A #5019	20
DI Water	74
Preservative	1

TECHNICAL DATA

<b>Appearance @ 20°C</b>	Opaque liquid
<b>Applications</b>	Skin care, lip care, and hair care products and in combination with analgesic products
<b>Color</b>	White
<b>Odor</b>	Characteristic
<b>pH (1 % solution)</b>	4-6
<b>Shelf Life (months)</b>	18
<b>Usage Level (wt%)</b>	7-5
<b>Storage (°C)</b>	Closed container at 12-32°