

MultiSal[®] Naturally Smooth (MS NS)

Technology to deliver pharmaceutical-grade salicylic acid.

Encapsulated salicylic acid (SA) is best known for the treatment of dermatitis, acne, psoriasis, calluses, and more.¹ It works as a keratoic, comedolytic, and bacteriostatic agent, causing the cells of the epidermis to shed more readily, opening clogged pores and neutralizing the bacteria within.² The active ingredients that help to treat these skin conditions are papaya, bromelain, and suprapein.

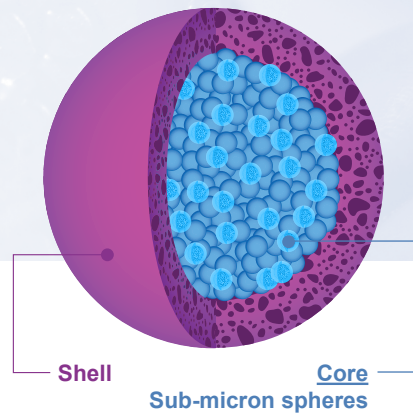


Figure 1: MS NS is double encapsulated. The SA is contained in sub-micron spheres (0.1-2 microns in diameter). Then the sub-micron spheres are re-encapsulated into microspheres (30-50 microns in diameter) offering a stable and potent treatment, even from an alkaline base.



Figure 2: MS NS is effective in reducing acne, blemishes, and general smoothing and skin toning. Before treatment (A), the face has blemishes. The number of blemishes is reduced after a single treatment (B). The wall of the microsphere ruptures when the product is rubbed onto the skin in the presence of water, which allows the sub-micron sphere to release that activates the release of SA into the skin.

HOW THE TECHNOLOGY HELPS YOU

MS NS is double encapsulated. SA is contained in sub-micron spheres (0.1-2 microns in diameter), then re-encapsulated into larger microspheres.



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SUPERIOR SKIN DEPOSITION

Traditional rinse-off products deposit only 2-5% of salicylic acid onto the skin, wasting over 95%. MultiSal® technology significantly enhances the deposition of SA in a rinse-off. Deposition of SA was determined by clinical testing (Figure 3).

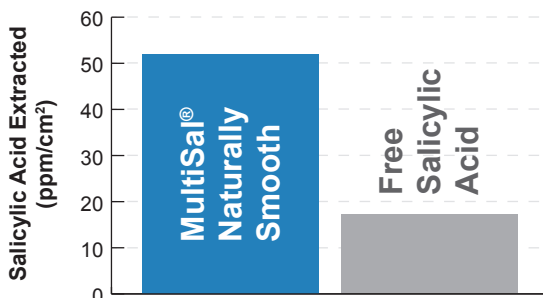


Figure 3: MS NS deposits significantly more SA. An extraction cup was used to extract SA from the skin. This process was repeated several times until most free SA was extracted from the skin. HPLC analysis was used to quantify the amount of SA extracted.

TIME RELEASE TECHNOLOGY

MultiSal® technology extends the release of the SA onto the skin. It exposes the skin to small amounts of acid over a longer period of time, rather than one large amount at once. This unique feature allows higher levels of SA to remain on the skin for several hours (Figure 4), for better efficacy and acne-fighting power without irritation.

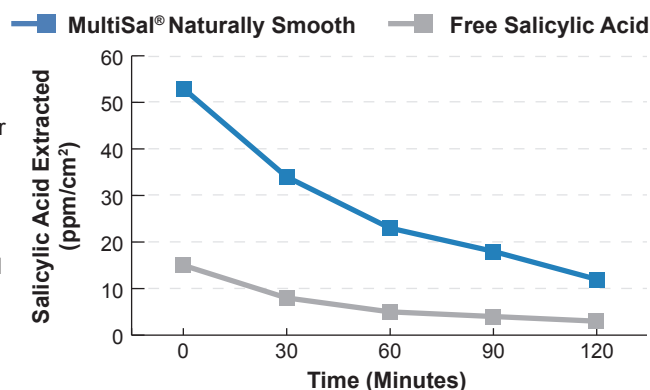


Figure 4: MS NS sustains the release of the SA longer than the free SA.

ENHANCED EFFICACY

An important benefit of the MultiSal® technology is enhanced efficacy from a rinse-off application. The cationic charge of the shell's surface provides superior adhesion onto the skin. This benefit makes it a valuable technology for products that are rinsed off the skin shortly after application.

FORMULATION

Ingredients	(W/W %)
MultiSal® Salicylic Acid	5.0
Kaolin	95.0

OTC limits are set at 2% for topical preparations expected to be left on the face, and 3% for those expected to be washed off, such as acne cleansers or shampoo. 17-27% is allowed for wart removal.

TECHNICAL DATA

Appearance @ 20°C	Free flowing powder
Applications	Suitable for anhydrous applications such as soap bars, on-the-go sticks, body powders
Color	Off-white
pH (1 % solution)	30 ± 3
Shelf Life (months)	36
Usage Level (wt%)	Cosmetic: Up to 1.67 OTC: 1.67-6.67 Rx: Over 6.67
Storage (°C)	Closed container at 12-32° with <45% RH

References

- Madan, RK; Levitt, J. (April 2014). "A review of toxicity from topical salicylic acid preparations". J Am Acad Dermatol. 70 (4): 788-92.
- Bosund, I; Erichsen, I; Molin, N. (1960-10-01). "The Bacteriostatic Action of Benzoic and Salicylic Acids." Physiologia Plantarum. 13 (4): 800-811. doi: 10.1111/i.1399.1960.tb08103.x. ISSN 1399-3054.