# MultiSal® Retinol (MS RT)

*Age-defying technology used to effectively treat wrinkles and brighten skin tone.*

Retinol stability is a major challenge for formulators, as it is susceptible to oxidation, which ultimately reduces the potency and limits effectiveness. Moreover, potent retinol can cause irritation on consumers with sensitive skin.
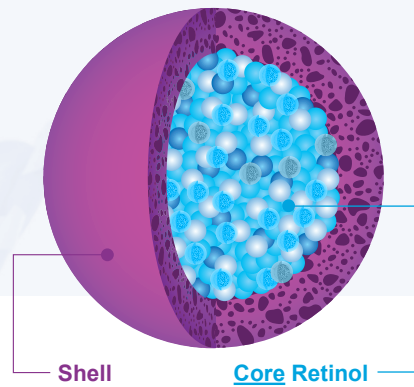


**Shell**   **Core** Retinol

**Figure 1:** The structure of MS RT with an outer microsphere shell and a core containing sub-micron spheres infused with retinol.



**MS RT TREATMENT →**

## HOW THE TECHNOLOGY HELPS YOU

MultiSal® technology is a double-layered encapsulation of retinol. The retinol is first contained within sub-micron spheres, which are re-encapsulated within larger mircospheres (Figure 1). The microsphere ruptures when the lotion is rubbed into the skin, releasing the sub-micron spheres encapsulated inside of the core that contain retinol. The sub-micron spheres slowly release retinol over time.



**MS RT raw**



**1** **Night cream**

## UNIQUE FEATURES

**1 EFFECTIVE FORM OF RETINOL**
Encapsulation technology stabilizes retinol, resulting in a longer shelf life and an effective skin treatment system.

**2 TIME RELEASE**
The controlled release system delivers small dosages of retinol over a longer period of time, making it suitable for sensitive skin that can't tolerate high dosages at once.

**3 FAST-ACTING RESULTS**
A visual difference that can be seen in just several days (Figure 2).

## VISIBLE RESULTS IN TWO WEEKS

MS RT reduces the appearance of fine lines in as little as two weeks. A study was done (n=5) with a lotion loaded with 0.2% retinol (Figure 2). After two weeks, there was a visual significant reduction of fine lines.
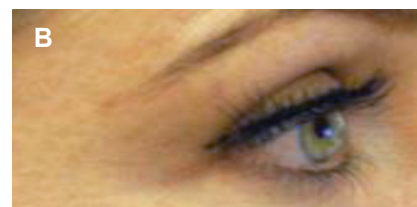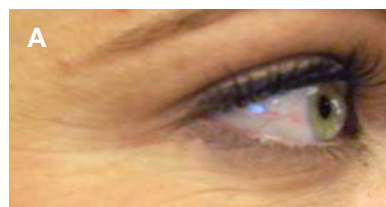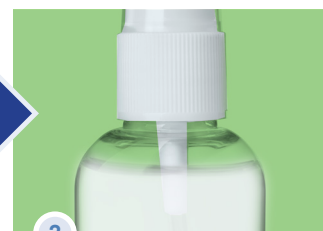


**2** **Serum**



A B

**Figure 2:** Before (A) and after (B) two weeks of daily use of a lotion containing MS RT loaded at 0.2% retinol.

![SALVONA®]

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## ENHANCED SHELF LIFE STABILITY

The stability of MS RT (0.1% retinol) was compared to that of free retinol in lotions (Figure 3). After 50 days at 42°C, HPLC analysis revealed that the encapsulation technology facilitated retention of 80% of the retinol while the free only retained 5% of initial record.

**Figure 3:** Amount of retinol retained in lotions containing MultiSal® technology versus the free. Amount of retinol was detected using HPLC after incubating the sample at 42°C for 50 days.
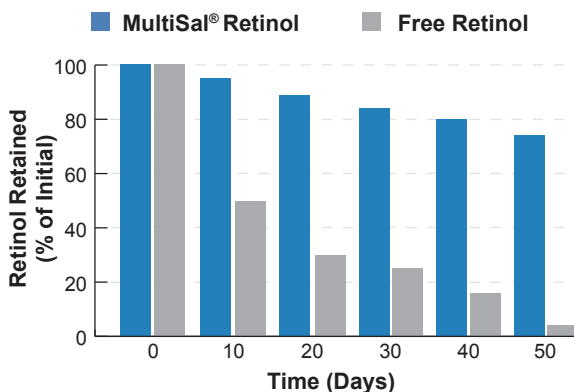


## CONTROLLED RELEASE

MS RT enables slow, controlled release of retinol on skin, allowing for better absorption (Figure 4).

**Figure 4:** Percent of retinol retained on the skin after application from a product containing 0.05% retinol from MultiSal® versus free over four hours. The release rate of MS RT technology was four times slower than that of the free.
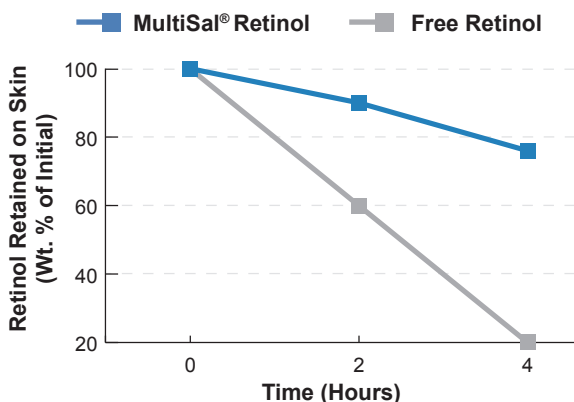


## FORMULATION

For best results, incorporate MS RT into the oil phase prior to mixing into the water phase.

| Ingredients | (W/W %) |
| --- | --- |
| MultiSal® Retinol | 0.5 |
| SalSphere® Aqua Skin | 5 |
| MultiSal® Vitamin C & E | 2 |
| Salvona Pre-Mix #5019 | 20 |
| DI Water | 71.5 |
| Preservative | 1 |

## TECHNICAL DATA

| | |
| --- | --- |
| Appearance @ 20°C | Free flowing powder |
| Applications | Lotions, creams, lip care, body powders, and make up |
| Color | Off-white to light yellow |
| Odor | Characteristic |
| pH (1 % solution) | 9.5 ± 1.5 |
| Shelf Life (months) | 12 |
| Usage Level (wt%) | 1-2 |
| Storage (°C) | Closed container at 12-32° with <45% RH |

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