

Actives

PRODUCT DOSSIER

RETICELL™

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PRODUCT DATA SHEET (PDS)

RETICELL™

Advanced cellulose-based delivery system

1. Description

RETICELL™ is an advanced cellulose-based delivery system designed to improve the stability, dispersion and controlled topical delivery of retinol.

The technology combines retinol with a hydrophilic cellulose-derived polymeric matrix and complementary carrier/stabilizing components to create a protected microenvironment around the highly oxidation- and light-sensitive retinoid.

By reducing direct exposure of retinol to environmental stressors and modulating its release from the carrier matrix, RETICELL™ is designed to provide a more formulation-friendly and controlled approach to topical retinol delivery.

Retinol is particularly susceptible to degradation caused by oxygen, light and heat, making stabilization a major challenge in cosmetic formulation. Encapsulation and carrier-based delivery systems have therefore been extensively investigated as strategies for improving retinol stability and topical performance.

2. How It Works

2.1 Retinol Protection

- RETICELL™ incorporates retinol within a cellulose-based polymer matrix, helping protect the active from oxidation, light and environmental degradation.

2.2 Controlled Release

- Hydrophilic matrix gradually hydrates on contact with the skin and controls the diffusion of retinol, providing sustained active availability rather than rapid release.

2.3 Enhanced Skin Delivery

- The controlled-release system promotes progressive partitioning and retention of retinol within the skin, supporting prolonged topical availability while limiting uncontrolled permeation.

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3. Recommended Use Levels

INGREDIENT	CONCENTRATION
RETICELL™	1-3%

This delivers approximately 0.1–0.3% active retinol in the finished formulation.

4. Pharmaceutical Characterization

PARAMETER	SPECIFICATION
Appearance	White to pale yellow free-flowing powder
Odor	Characteristic / low odor
Retinol content	10%
Moisture	≤ 5%
pH of dispersion	5.0–6.0
Dispersibility	Easily dispersible
Retinol association/encapsulation efficiency	Target ≥85%

5. Role in Cosmetic Formulations

Key Benefits

Enhanced Retinol Stability

Designed to protect retinol against major environmental degradation pathways.

Improved Dispersion

Transforms the highly lipophilic active into a more formulation-compatible delivery form.

Controlled Release

Provides gradual availability of retinol from the polymeric matrix.

Improved Formulation Flexibility

Potentially compatible with creams, emulsions, gels, serums and other topical systems.

Reduced Direct Exposure

The carrier architecture minimizes the immediate exposure of free retinol to the surrounding formulation environment.

Potentially Improved Tolerability

Controlled release may help reduce the intensity of the initial retinol exposure compared with an equivalent concentration of freely available retinol.

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6. Formulation Considerations

6.1 Handling

- Protect from Light
Handle and store retinol under low-light conditions and use opaque or amber containers to prevent degradation.
- Avoid High Temperatures
Add retinol during the cool-down phase of formulation, preferably below 30°C.
- Minimize Air Exposure
Keep containers tightly closed and limit oxygen exposure during processing to maintain stability.
- Use Appropriate Protective Equipment
Wear gloves, protective eyewear, and a lab coat during handling.
- Store Under Recommended Conditions
Store in a cool, dry place, preferably at 2–8°C, away from moisture and direct sunlight.

6.2 Avoid prolonged exposure to:

- Temperatures >40°C
- Direct UV or intense visible light
- Excessive oxygen exposure
- Strong oxidizing environments
- Extreme pH conditions

6.3 Use with caution with:

- Benzoyl peroxide
- High levels of strong AHA/BHA acids
- Highly oxidative vitamin C systems
- High concentrations of electrolytes
- Strong ionic surfactants
- Formulations containing significant levels of transition-metal contaminants such as iron or copper

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7.Application Formats

RETICELL™ can be positioned for:

- Anti-aging serums
- Anti-wrinkle creams
- Night creams
- Skin-renewal formulations
- Uneven-tone formulations
- Texture-refining products
- Photoaging-support formulations
- Retinol emulsions
- Encapsulated active concentrates

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8. Clinical Output

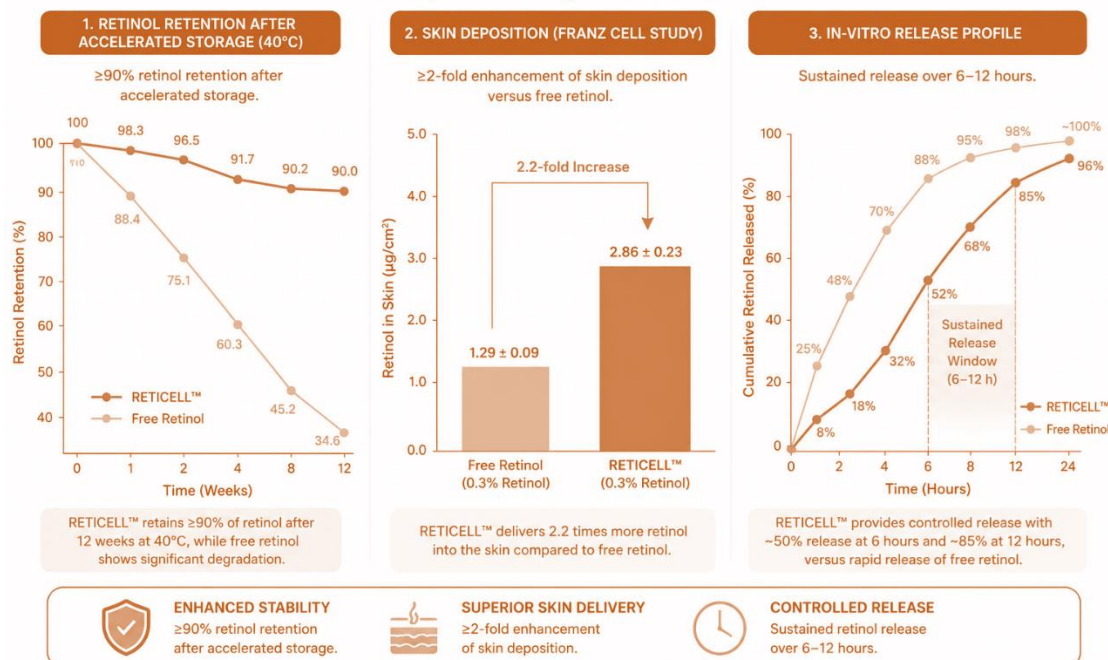
RETICELL™ is a cellulose-based retinol delivery platform designed to improve retinol chemical stability while increasing intracutaneous availability through controlled matrix-mediated release.

Target performance:

- ≥90% retinol retention after accelerated storage.
- ≥2-fold enhancement of skin deposition versus free retinol.
- sustained release over 6–12 hours.

RETICELL™ PERFORMANCE PROFILE

Stability • Skin Delivery • Controlled Release



Actives

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