

Original Equipment Manufacturing

Contract Processing of Lyophilization



We perform lyophilization (Freeze-dried) processing for two-component cosmetics that are re-dissolved at the time of use, Freeze-dried lotions and essence containing collagen and other raw materials with less stability over time.



1 Add Component 1 to Component 2 at the time of use.

2 Shake to dissolve.

3 Component 2 is ready to use as needed.

Formulation examples

Freeze-dried collagen raw materials

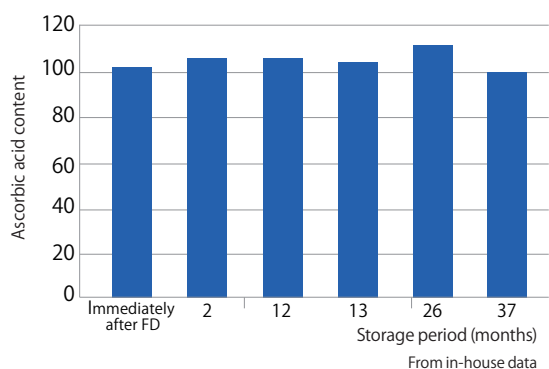
Prevents the denaturation of the collagen triple helix due to heat and retains its water retention capabilities.

Freeze-dried vitamins

Maintains the activation of Vitamin C, which is unstable in aqueous solution.

- Suitable not only for regular use but also for intensive care concepts.
- Can incorporate large amounts of the raw materials.
- Stabilizes heat-sensitive ingredients and raw materials that are unstable over time.
- Dissolves just prior to use, giving a sense of freshness and making it seem handmade.
- The use of preservatives can be kept at a minimum.

Stability of ascorbic acid after freeze-drying (FD)



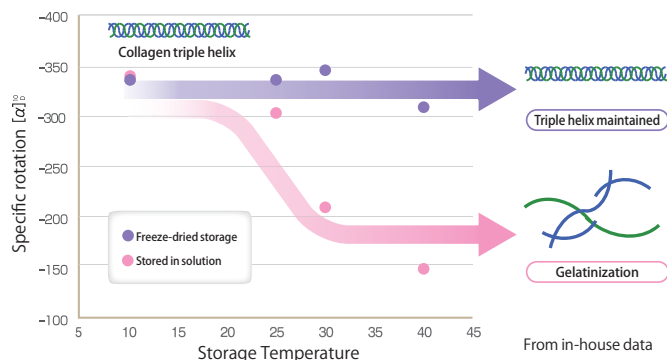
Test Method

The ascorbic acid content of a lotion containing ascorbic acid that is freeze-dried and stored at room temperature is measured.

Results

If the ascorbic acid content immediately after FD is considered to be 100%, it was stable with virtually no change after 37 months.

Thermal stability of the collagen triple helix after FD



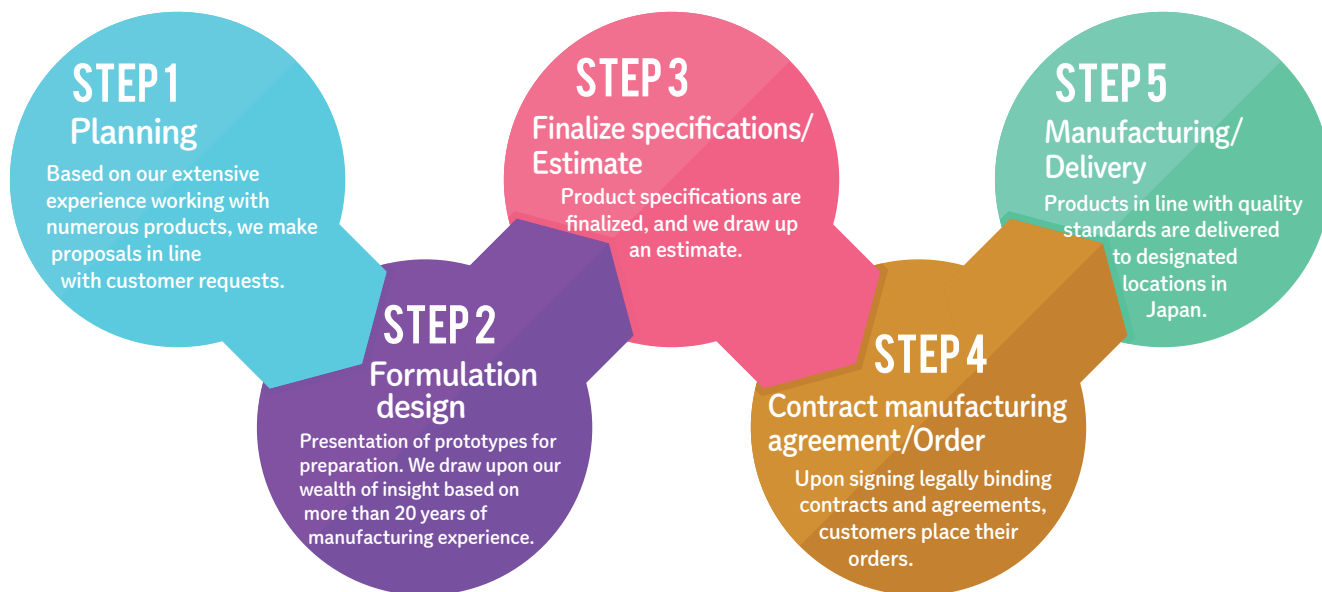
Test Method

A 0.1% collagen triple helix solution and the same solution after FD were heated for one hour at 25°C, 30°C, and 40°C, and a polarimeter (DIP-370) was used to measure the specific rotation.

Results

Freeze-dried technology prevented the collagen triple helix from gelatinization due to heat, and maintained the highly moisturizing dimensional structure of the collagen triple helix.

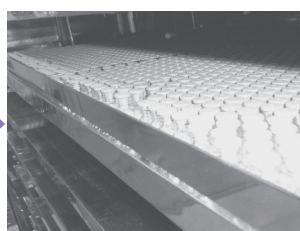
Materialization Process



Manufacturing Process



Prepare solution/Fill containers



Freeze-drying



Labeling/Testing



Shipment

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