Personal Care

Usage Tips for Preserving Bead Structure

Omya Cosmospheres

THINKING OF TOMORROW

Omya Cosmospheres

What are the Omya Cosmospheres?

The Omya Cosmospheres are natural and biodegradable beads designed to enhance the visual appeal and sensory experience of personal care products. They remain solid during manufacturing and gradually soften when exposed to water. During application, the beads break under pressure, releasing their active ingredients and progressively disappear without leaving any residue.

What Can Cause Breakage of the Beads during Manufacturing?

Although the Omya Cosmospheres are delivered as hard, solid beads to facilitate incorporation, it is still important to handle them with care and follow handling instructions during manufacturing to avoid unintentional breaking or crushing.

The Cosmospheres can break due to mechanical stress during incorporation, pumping, or conditioning, especially if exposed to excessive shear forces. Ensure proper handling and manufacturing practices to maintain their integrity and achieve the most optimized visual appearance.

Key Features:

- Made from natural ingredients (Mannitol or Lactose and Microcrystalline Cellulose).
- Free from microplastics, preservatives, and solvents.
- Available in vegan and COSMOS-certified variants.
- Compatible with a wide range of ingredients, including pigments, vitamins, and plant extracts.

Key Tips to Prevent Breakage

1. Storage of Raw Material

Before use, the Omya Cosmospheres must be stored in a dry environment with a temperature preferably between 5°C and 25°C. Premature exposure to humidity can cause the beads to soften slightly, increasing the risk of breaking during incorporation. Ensure proper storage conditions to preserve the structural integrity of the beads until they are ready to be incorporated into formulations.

2. Formulation and Incorporation

Timing: Incorporate the Omya Cosmospheres at the end of the manufacturing process. Adding them too early exposes them to prolonged mixing and shear forces, increasing the risk of crushing.

Stirring: Stir slowly and at cold to moderate temperatures to prevent the beads from softening or breaking. Gentle mixing helps distribute the beads evenly without damaging them.

Water Content: the Omya Cosmospheres require a minimum of 30% water in the formulation to soften properly over time. This water content allows the beads to absorb enough moisture to become soft and disintegrate during application, enhancing the sensory experience.

Note: Water content affects the softening speed of the beads but does not cause premature breakage. Higher free water content will accelerate softening but will not cause the beads to break during processing.

3. Equipment Selection

Choose the right equipment to prevent breakage of the Omya Cosmospheres during both production and conditioning.

- Use low-shear mixers such as slow-speed stirrers or static mixers to incorporate the Omya Cosmospheres gently and evenly.
- Avoid homogenizers with opposing high-speed rotating parts, as they will break the Omya Cosmospheres due to excessive shear.
- In general, be cautious of mixing systems with narrow gaps between the stirrer and the wall, where beads can get crushed.
- For transferring formulations, opt for positive displacement pumps which move the product smoothly without damaging the beads.

4. Conditioning and Filling

Timing: To prevent premature breakage, it is recommended to fill products containing the Omya Cosmospheres within 24 hours of manufacturing. This minimizes the risk of bead damage caused by prolonged mechanical stress in storage tanks or during recirculation.

Filling Speed: Adjust the speed of the pump to a low to moderate setting during filling. High-speed filling increases shear stress, which can compromise the structural integrity of the beads. Conduct tests at different speeds to identify the optimal setting for your specific formulation.

5. Packaging Recommendations

The Omya Cosmospheres are compatible with a wide range of packaging types, including tubes, jars, dispensers, and even pump packaging. However, certain precautions should be taken to prevent breakage:

Standard Pump Packaging: Ensure that the internal diameter of the dip tube is at least 3 times larger than the diameter of the beads. This prevents clogging and reduces the risk of crushing as the beads pass through.

Airless Packaging: Airless pumps often have smaller openings, which can cause beads to be crushed. It is essential to test airless packaging thoroughly to ensure compatibility. Testing different models can help identify those that work best with the Omya Cosmospheres.

If you have any questions or need further assistance, please don't hesitate to contact us. Our team is here to provide the support you need.

Omya International AG, Baslerstrasse 42, CH-4665 Oftringen

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