Entropic® Biodegradable Microspheres

INCI Name: 3-Hydroxybutyrate/3-Hydroxyhexanoate Copolymer

KEY FEATURES

- Biodegradable*, Biobased, and Natural**
- Non-nano
- Replacement for synthetic microspheres
- Soft-focus effect
- Mattifying, texturizing, opacity
- Smooth feel/Ball-bearing effect
- Stabilizing effect on emulsions
- Suitable for lipophilic and hydrophilic formulations
- Highly compressible in pressed powders

PRODUCT DESCRIPTION

Natural, biobased, and biodegradable sustainable sensory powder for cosmetics and personal care that is used both as a biodegradable replacement for synthetic polymeric microspheres (microplastics) such as Nylon-12 and PMMA and as a cost-conscious replacement for biodegradable solutions such as cellulose microspheres.

GENERAL INFORMATION

Appearance: White Powder
Particle Shape: Spherical
Median Particle Size (µm) = 5 – 10
Melting Point = 150°C
Relative Density = 1.27 g/cm^3

FORMULATIONS

Pressed Powders

Entropic® PR01075 can be used for multiple pressed products (e.g., eye shadow, blush, pressed powders, etc.) and can be compressed at standard pressures (400 psi) and higher pressures (600 psi) without sacrificing payoff or becoming brittle.

Entropic® PR01075 shows improvement over synthetic microplastics such as Nylon-12 in powder texture, payoff, and application and can be used at a lower percentage than synthetic microplastics.

Compatibility

Compatible with a wide range of common fluids, including Castor Oil, Caprylic/Capric Triglycerides, Apricot Kernel Oil, Dimethicone (1.5 cst), Dimethicone (350 cst), Jojoba Oil and Butylene Glycol

Prototype Compositions

Prototype formulation ingredients and procedures are available in a separate document.

*Not classified as a microplastic under EU regulations (ECHA Annex XV, OECD 301B)
**Index of Natural Origin (INO) = 1

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INTERFACIAL NAGASE Group

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APPLICATIONS

Biodegradable sensory powder ingredient for hot pour, emulsion, anhydrous systems and powders in cosmetics and personal care especially:

- **Color Cosmetics**
  - Loose Powder
  - Pressed Powder
  - Liquid Foundation
  - Lip and Cheek Sticks
  - Mascaras
- **Skincare and Suncare**
  - Serums
  - Creams
  - Lotions
  - SPF Lotions and Oils
- **Hair Care**
  - Dry Shampoo
  - Styling Aids

PACKAGING

25-kg bags

REGULATORY INFORMATION

A complete summary of regulatory information is available in a separate document.

Country/Area	Inventory	Remarks
US	FDA	No FDA or state restrictions
	TSCA	Not listed.
EU	Annexes	Not restricted by any Annex. Complies with (EC) No. 1223/2009
	REACH	Exempt from REACH (polymer)
Canada	HOTLIST	Not present. No restrictions.
	DSL / NDSL	Not listed, subject to 1000kg/year per importer. CEPA Registration in process.
China	IECSC	Listed: 3-羟基丁酸酯与 3-羟基己酸酯的聚合 物
	IECIC	Not listed. New Cosmetic Ingredient Registration in process with NMPA. Registration date estimated Q4 2026.
Mercosur Markets		Not restricted
Mexico		Not restricted
ASEAN Markets		Not restricted
ANDEAN Markets		Not restricted
Australia	AICIS	Not listed

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