

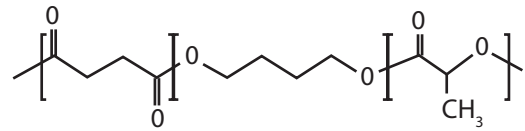
Resobeads BG-1030

Biodegradable Polymer Microspheres



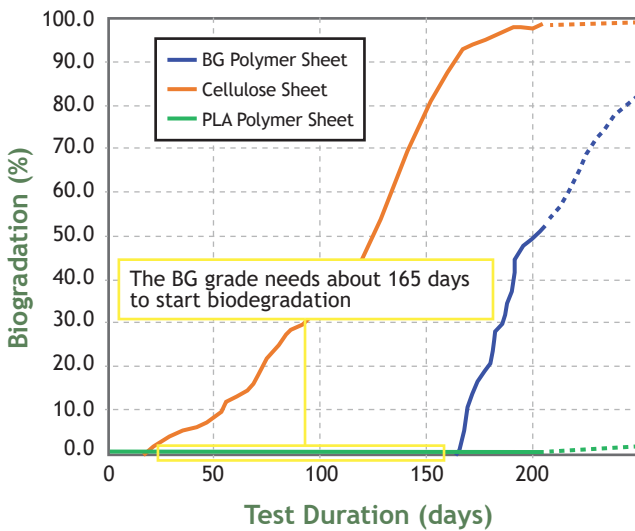
Microspheres have been used for decades to provide tactile and visual enhancement to cosmetic formulations. Many polymers are used to manufacture them, and make them soft and elastic so they feel silky and creamy on application. However, recent concerns about the bio-persistence of these plastic beads have led the search for a more eco-friendly equivalent. Mineral and natural polymers are used for this purpose, but they usually are very rigid materials and therefore might not give the same feel as soft plastics.

Kobo is now offering a new microsphere, **RESOBEADS BG-1030**, made of a biodegradable polyester that is as soft as polyacrylate or polyethylene, while not having the potentially harmful bio-persistence of these polymers.



Chemical structure of Polybutylene Succinate

Aerobic biodegradation at seawater/sediment interface



Polybutylene Succinate was tested for its aerobic biodegradation in seawater and compared to Cellulose and Polylactic Acid, using a method based on ISO/DIS 19679. In this test, Polybutylene Succinate shows a biodegradability that is lower than cellulose but higher than PLA, making it a good candidate for non-bio-persistent microspheres.

The biodegradability was estimated from the degree of disintegration of the test materials under the ISO/DIS 19679 testing conditions at 26°C for 205 days.

INCI Name: Polybutylene Succinate

Particle size (average): 9 µm

Oil absorption: 55 g / 100g

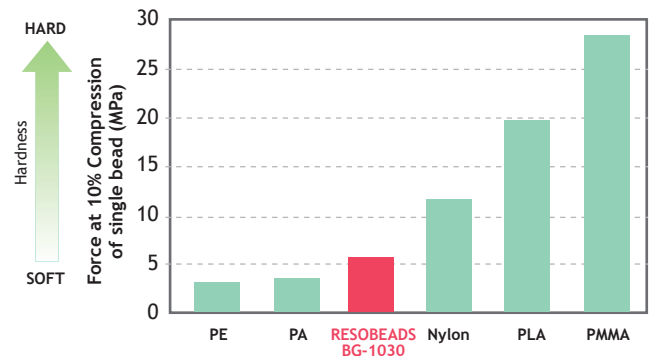
Refractive Index: 1.49

Bulk Density: 5.9 g/cu.in

RESOBEADS BG-1030 have a low softening point and should be added under 90°C

Compressibility test of RESOBEADS BG-1030 compared to other polymer microspheres

The strength of RESOBEADS BG-1030 under compression was tested vs. other common polymer microspheres. The graphic below shows that RESOBEADS BG-1030 are softer than Polymethyl Methacrylate (PMMA), Nylon or Polyacrylate (PA) microspheres with compressibility similar to Polyacrylate (PA) or Polyethylene (PE) microspheres.



KOBO

Technical Literature ref M-Resobeads-001 - September 4, 2018

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KPP-113

Eco-Friendly Pressed Powder with RESOBEADS BG-1030

Part 1

- GMS-NJE3 - Kobo Products: *Mica (And) Jojoba Esters* 70.28%
- RESOBEADS BG-1030 - Sumitomo Seika/Kobo Products: *Polybutylene Succinate* 10.00%
- RBTD-671-NJE2 - Kobo Products: *Titanium Dioxide (And) Jojoba Esters* 7.00%
- MAGNESIUM MYRISTATE - Kobo Products: *Magnesium Myristate* 2.00%
- BYO-NJE3 - Kobo Products: *Iron Oxides (CI 77492) (And) Jojoba Esters* 1.00%
- BRO-NJE2 - Kobo Products: *Iron Oxides (CI 77491) (And) Jojoba Esters* 0.86%
- BBO-NJE2 - Kobo Products: *Iron Oxides (CI 77499) (And) Jojoba Esters* 0.46%

Part 2

- JOJOBA OIL - Vantage: *Simmondsia Chinensis (Jojoba) Seed Oil* 7.50%

Part 3

- Lexgard® E - Inolex Chemical Company: *Ethylhexylglycerin* 0.50%
- Mikrokill® COS - Arch Chemicals, Inc: *Phenoxyethanol (And) Chlorphenesin (And) Caprylyl Glycol* 0.40%

Manufacturing Procedure

1. Combine Part 1 and blend until uniform.
2. Slowly add Part 2 to Part 1 and blend well.
3. Slowly add Part 3 drop by drop and blend until uniform.
4. Press at 500psi.

Description

This environmentally friendly pressed powder features RESOBEADS BG-1030. This biodegradable and sustainable polymer offers soft focus to the formula and enhances the feel. Kobo's natural NJE treated mica and pigments provide good skin affinity, increased payoff and enhanced wear. MAGNESIUM MYRISTATE is an anticaking agent which adds slip upon application and works as a dry binder.