

## Frost & Sullivan gives award for best innovation in the cosmetics sector to Bio-on

- Minerv Bio Cosmetics, the 100% natural bioplastic microspheres biodegradable in soil and water, are named the year's most innovative biobased product in the cosmetics sector.
- *Frost & Sullivan* finds that "Bio-On is properly positioned to serve as a leader in the bio-polymeric ingredient revolution for the cosmetics industry".
- For *Frost & Sullivan*, the bioplastic microspheres patented by Bio-on are "incredibly versatile" and are "a sustainable alternative to synthetic polymers for use in not only cosmetics, but also in the food, healthcare, packaging, and FMCG industries. Looking ahead, the PHAs could provide a potential solution for cancer treatment within the next few years".

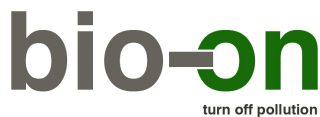
**LONDON (UK) 8 October 2018** – Bio-on, listed on the AIM segment of Borsa Italiana and operating in the high quality bioplastic sector, **has been awarded the "Best Practices" award by Frost & Sullivan for New Product Innovation in the Bio-based Ingredients for the Cosmetics industry.** In particular the analysts at *Frost & Sullivan* examined the extraordinary performances of the **Minerv Bio Cosmetics** bioplastic microspheres designed to replace the polluting oil-based microplastics that are now found in many cosmetic formulations. An innovation certified by **Natrue** and **Cosmos** that looks set to profoundly transform the beauty products sector.

The award, globally recognised as one of the most prestigious and reliable, confirms the unique nature of Bio-on's solutions made from 100% natural and biodegradable bioplastic. Indeed, *Frost & Sullivan* finds that "Bio-on is properly positioned to serve as a leader in the bio-polymeric ingredient revolution for the cosmetics industry".

Outlining its reasons for assigning the award, *Frost & Sullivan's* analysts write that "Bio-on SpA of Italy has developed an innovative range of patented biopolymers called PHAs (polyhydroxyalkanoates) under the brand MINERV. MINERV-PHAs can be used as cosmetics ingredients because they are based on polyhydroxybutyrate (PHB), which is a fully biodegradable PHA. For this reason, MINERV can be easily biodegraded in both marine water and soil yielding simple by-products such as carbon dioxide and water." **Bio-on's biopolymers "successfully replace highly polluting products such as PET, PP, PE, HDPE, and LDPE", which are widely used in cosmetics such as lipstick, lip gloss, mascara, eye-liner, nail polish, creams, shampoos, shower gels and toothpastes.** The presence of these microscopic plastic particles, which are oil-based and not biodegradable, is the cause of increasing marine pollution and a source of alarm around the world.

*Frost & Sullivan* confirms that the bioplastic microspheres patented by Bio-on (produced in various sizes and resembling a powder) are "incredibly versatile, with applications ranging from skin cream and make-up to hair care or hygiene products" and, if their high porosity is exploited, they "can act as a carrier and dispenser of bioactive ingredients such as vitamins, enzymes, fragrances, and other cosmetic actives".

The award recognises that Bio-on bioplastics **"are a sustainable alternative to synthetic polymers for use in not only cosmetics, but also in the food, healthcare, packaging, and FMCG industries. Looking ahead,"** write the analysts at *Frost & Sullivan*, **"the PHAs could provide a potential solution for cancer treatment within the next few years"**.



“The company is differentiated from its competitors by its capacity to address specific challenges its customers face by developing customized solutions”, writes *Frost & Sullivan*, and “offering end-to-end support in research, development, manufacturing, and even technology licensing”.

The main characteristics that distinguish **Minerv Bio Cosmetics**, the cosmetics ingredients (resembling a powder) made from Bio-on bioplastic microspheres of various sizes, are listed below:

- 100% natural. Made from renewable plant sources using a bacterial fermentation process (human-friendly, non-pathogenic bacteria) and the entire process uses mechanical methods without chemical solvents.
- 100% biodegradable. Full biodegradability in water and soil certified by Vincotte.
- Exceptionally high sphericity. This is a highly sought after characteristic in the cosmetics sector, and particularly in texturizing powders, because it guarantees smooth creams that are easier and more pleasurable to apply.
- High porosity. Thanks to this characteristic, bioplastic microcapsules can be “loaded” with and easily absorb active substances, which can then be carried and released for various applications. For some cosmetic creams, high porosity helps control excess sebum.
- Extraordinary optical properties. Bio-on’s bioplastic microspheres help make cosmetics that exceed the mattifying effect of most products currently on the market.
- They can also be used in sun protection products. The booster effect of Bio-on’s cosmetics ingredients drastically reduces the quantity of chemical UV filters to be used in the formulation.
- It is a platform product. The powders produced from 5 to 20 micron in size can be used in not only cosmetics, but also in the food, healthcare, packaging and FMCG industries. In the future, it could provide a solution for cancer treatment thanks to the ability of the microspheres to act as a carrier of active substances.

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## Bio-on S.p.A.

Bio-on S.p.A., an Italian Intellectual Property Company (IPC), operates in the bioplastic sector conducting applied research and development of modern bio-fermentation technologies in the field of eco-sustainable and completely naturally biodegradable materials. In particular, Bio-on develops industrial applications through the creation of product characterisations, components and plastic items. Since February 2015, Bio-on S.p.A. has also been operating in the development of natural and sustainable chemicals for the future. Bio-on has developed an exclusive process for the production of a family of polymers called PHAs (polyhydroxyalkanoates) from agricultural waste (including molasses and sugar cane and sugar beet syrups). The bioplastic produced in this way is able to replace the main families of conventional plastics in terms of performance, thermo-mechanical properties and versatility. Bio-on PHAs is a bioplastic that can be classified as 100% natural and completely biodegradable: this has been certified by Vincotte and by USDA (United States Department of Agriculture). The Issuer's strategy envisages the marketing of licenses for PHAs production and related ancillary services, the development of R&D (also through new collaborations with universities, research centres and industrial partners), as well as the realisation of industrial plants designed by Bio-on.

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