

PRESS RELEASE

Bio-on successfully completed the first test phase for the special bioplastic production facility inaugurated on 20 June.

- All tests on machines and software are positive and on schedule. The company confirms the full production regime by autumn.
- In 2018 about 150 tons of micro powders in special PHAs bioplastic will be produced and marketed for the cosmetics industry. The current annual production capacity is 1000 tons.
- "Respecting the timeline is fundamental," explains CEO Marco Astorri, "since the new European directive about the reduction of pollution caused by traditional plastic, which the European Parliament will vote in September, will open a huge market for biodegradable plastics".
- Bio-on thanks the 50 suppliers' companies who have made possible to create the most modern production hub in the world for the production of bioplastics.

BOLOGNA, 16 JULY 2018 – **Bio-on**, operating in the sector of bioplastic of high quality and listed on the AIM segment of the Italian Stock Market – Borsa Italiana, **announces that it has successfully completed the first test phase on the plants of the new production hub inaugurated on 20 June 2018 at Castel San Pietro Terme near Bologna.** This is the first owned factory to produce special bioplastic PHAs, 100% natural and biodegradable, for advanced product niches with high added value such as microscopic beads (microbeads) for the cosmetics industry. **The total investment for the production center and for the new research laboratories is 20 million euros.**

«We are extremely satisfied – explains **Marco Astorri, President and CEO of Bio-on** – and we want to thank the 50 companies that allowed the construction of this factory that represents an excellence of the *Made in Italy* and the beginning of a new era for the worldwide green chemistry»

In recent days, **Bio-on has completed 100% of the FAT (Factory Acceptance Test)** which consist of a series of checks carried out together with suppliers on the machines, both mechanical and software. At the same time, another important test phase known as **SAT (Site Acceptance Test)** is under way since the beginning of June and then will pass to the **Pre-Commissioning / Commissioning** phase after the summer, a set of procedures to make the plant work continuously in accordance with the project timelines. So far, all tests have been successful and performed on schedule.

«As announced on June 20th during the inauguration, we expect to be fully operational by autumn - explains **Riccardo Casoni, director of Bio-on Plants**, the division of Bio-on responsible for the production unit - and to be able **to produce and to market as early as 2018 a quantity of PHAs micro powders of about 150 tons**». The new production center has a yearly production capacity of 1,000 tons that can be doubled quickly.

«Respecting the project deadlines and being able to increase the production is fundamental - explains Marco Astorri - since it does not escape anyone that **the new European directive on the reduction of pollution caused by traditional plastic, which the European Parliament will have to approve in September, will open a huge market for biodegradable plastics.** And Bio-on has a unique competitive advantage since our bioplastic is 100% biodegradable not only on land but also in water».

More than 40 suppliers and 10 companies have worked on the construction site to create the most modern production center in the world for the production of bioplastics.

The companies that supplied the products are: **WALTER TOSTO S.P.A.** fermenters and tanks in carbon steel and stainless steel, **SOLARIS BIOTECHNOLOGY** vegetative fermenters, **SPX FLOW TECHNOLOGY** clarifiers, **HARI** microfiltration plants, **C.F.T. S.p.A. PARMA** sterilization systems, **SICCADANIA A/S DENMARK** spray drier, **MC2 BOLOGNA** salts

dosing systems, **SELIP Spa** fiberglass tanks, **CAMPI Ferrara** carbon steel tanks and tube bundle heat exchangers, **FLOWERVE Milano** centrifugal pumps, **ENVIROGEN GROUP ITALY S.p.A. PESCONTINA** air and steam filters, **LEWA PASSIRANA DI RHO** dosing pumps, **KELVION PARMA** plate heat exchangers, **ATLAS COPCO S.p.A.** compressors, **MAVAG AG SWITZERLAND** foam separators, **ACMA SERVICE** mixing and storage plants, **ADUE di Squeri D. & C S.p.A.** sugar dissolving plants, **SOC. COOP BILANCIAI CAMPOGALLIANO** weighs, **B. PITTALUGA & C** static mixers, **CARRARO SRL SEGRATE** desuperheaters, **MAEG COSTRUZIONI S.p.A.** metallic carpentry, **SCHINDLER S.p.A.** freight elevator, **SEA S.p.A.** transformers, **SIEMENS** DCS systems, **PAGANI PACKAGING** packaging machines, **OMAC srl** volumetric pumps, **PANTALONE Srl** galvanized and carbon steel pipes and fittings, **CIMS srl** building works, **BEA Srl** tie rods and nuts, **SPIRALIT Milano** gaskets, **RACCORTUBI S.p.A.** stainless steel pipes and fittings, **NEW SGUASSERO** pipes and fittings PVC + FG, **SCAM TPE** cooling towers, **SIAD S.p.A.** Nitrogen plants, **BANCOLINI SYMBOL** industrial printers sw, **SAMSON** control valves, **KSB ITALIA** manual valves, **GEMUE Srl** valves for sterile lines, **ALFA VALVES** valves on-off.

The companies that have worked in the building site are: **ZIRONDELLI & REGAZZI** electrical systems, **SITIE IMPIANTI INDUSTRIALI SPA** electrical and instrumental plants, **MEGA Srl** industrial automation, **SICURITALIA S.p.A.** anti-intrusion systems, **EUROVER** Ravenna painting, **ENERTECH**, mechanical processing, **CIMS srl** construction, **WELDING DUE BI S.p.A.** mechanical assembly, **TIM S.p.A.** phone and data, **HERA S.p.A.** trigeneration.

Some numbers on the plant and on the works:

40 suppliers of equipment
10 companies that have made the plant on site
Piling of the plant area with **380** piles of **30m** high each
1500 m2 of container rooms
45,000 working hours in the last two months
3000 m3 of concrete
420,000 kg of reinforcement iron
600,000 kg of mounted metal structural work

The first product that will come out from the plant of Castel San Pietro Terme will be **Minerv Bio Cosmetics**, the micro bioplastic beads for the cosmetic industry to replace the current plastic particles derived from petroleum, polluting and non-biodegradable. These microscopic beads (microbeads), which are used as thickeners or stabilizers in the most common products such as lipsticks, lip gloss, mascara, eyeliner, glazes, creams, shampoos, bubble baths and even toothpastes, pollute the environment because once dissolved in water, after the normal rinsing, they enter forever in the natural cycle: planktons of seas and rivers swallow these plastic particles introducing them in the food chain. **This pollution is so serious that the US first decided to ban the use of polymers obtained from petroleum in body care products by law (Microbead-Free Waters Act of 2015).** A decision recently followed by other countries such as Canada, UK, Sweden and France, or announced as in Ireland, Netherlands, Italy and others (*the ban on using products containing microbeads has been implemented differently and starting from different dates in the listed countries. Source: Bio-on processing, Wikipedia and BeatTheMicrobeads.org*). The use in cosmetic products of the bioplastic **Minerv Bio Cosmetics** eliminates these pollutants because the micro particles of bioplastic are naturally biodegradable in water and therefore do not enter the food chain. Not only that, the biopolymer developed in **Bio-on** laboratories is, in the decomposition phase, a nutrient for some microorganisms and plants present in nature. So, the benefit to the environment is double.

All the **Minerv PHAs** bioplastics (**polyhydroxyalkanoates**) developed by **Bio-on** are made from renewable plant sources with no competition with food supply chains. They guarantee the same thermo-mechanical properties as conventional plastics with the advantage of being 100% eco-sustainable and naturally biodegradable.

On July 14, 2018, a new video was published describing the work done in just 10 months for the construction of the Castel San Pietro Terme plant: <https://youtu.be/tJytKAV8tIs>

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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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