



## PRESS RELEASE

Bio-On S.p.A.

### Biodegradable plastics from biodiesel production by-products

**Bologna, 16 June 2015** – Bio-on S.p.A., the leader in eco-sustainable chemical technologies, announces its completion of another phase in the development of the technology for making PHAs from glycerol and today stands ready to grant licenses for this new technology to realise the first PHAs bioplastic production plants using biodiesel by-products.

Glycerol, also known as crude glycerol, is a waste product of biodiesel production and is present in large quantities around the world. Europe produces approximately 4 million tons per year - a figure that is constantly increasing. Its use as crude glycerol is problematic and over-production has caused its value to slump. In recent years, Bio-on has developed a technology for using crude glycerol in the production of high-performing PHAs biopolymers (described at IPO). This interesting by-product is added to others developed by Bio-on obtained from sugar beet, sugar cane and potatoes.

Bio-on technology now enables production facilities producing from 2,000 tons/year to 10,000 tons/year of PHAs to be realised. PHAs, or polyhydroxyalkanoates, are bioplastics that can replace a number of traditional plastics currently made with petrochemical processes using hydrocarbons. PHAs guarantee the same thermo-mechanical properties with the advantage of being completely naturally biodegradable.

*"It is a great scientific and engineering achievement in the bioplastics world," explains Bio-on S.p.A. Chairman **Marco Astorri**, "because it shows that it is possible to transform a new waste product such as glycerol into a raw material, expanding concepts such as biodegradability and eco-sustainability with innovative, advanced plastics. It's an important step in the affirmation of PHA in the latest-generation plastics market. The intuition of **Bio-on**, always looking for new waste materials to develop high-performing biopolymers, adds a new "ingredient" to the construction of the Italian green chemical industry," says **Astorri**, "and it enables crude glycerol to be processed directly, without the need for refinement, in order to make high-performing PHAs biopolymers".*

Current **crude glycerol** production represents a by-product equal to 10% of biodiesel production from transesterification processes.

#### **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 traditional plastics (PE, PP, PC, etc.) in terms of performance, thermo-mechanical properties and versatility. The Issuer's PHA is a bioplastic that can be classified as 100% natural and completely biodegradable: this has been certified in Europe by Vincotte and in the US 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. The alphanumeric codes for ordinary shares "ON" IT0005056236, for ordinary shares "ON" with bonus share IT0005056228 and for warrants "WARRANT Bio-On 2014-2017" IT0005056210. The minimum unit of trading envisaged by the Italian Stock Exchange is 250 shares. Company Nomad is EnVent S.p.A.. Banca Finnat Euramerica S.p.A. acts as company specialist.

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