**31st March 2021**

**PRESS RELEASE**

Biodegradation of Symphony’s d2w Oxo-biodegradable Plastic in the Oceans - proved beyond doubt

Symphony Environmental are very pleased to announce the successful conclusion of the 5-year Oxomar study (the “Study”) sponsored by the French Agence National de Recherche.

This study provides further comprehensive and reliable scientific data on the performance of d2w in the oceans. The study had a multidisciplinary approach including physics, chemistry, and biology.

**Highlights of the Study:**

* Biodegradation proved beyond doubt in the marine environment.
* Direct correlation of lab results to real-world conditions. This is critical, and hugely positive, because until now it has been doubted that laboratory results could demonstrate performance in real life marine conditions.
* Proof of transformation into non-plastic biodegradable oligomers found in nature.
* Non-toxic to marine creatures

The report on this ground-breaking scientific study has been submitted to the Agence Nationale de la Recherche. Symphony made a contribution to the costs of the project and the oxo-biodegradable plastic studied in the project contained the company’s d2w oxo-biodegradable masterbatches.

The report confirms the findings of the scientists in their September 2020 interim report that **“Oxo-biodegradable plastics biodegrade in seawater and do so with a significantly higher efficiency than conventional plastics**,” and that “**The oxidation level obtained due to the d2w prodegradant catalyst was found to be of crucial importance in the degradation process.”**

The report confirms the studies by Queen Mary University London, and Station d’essais de Vieillissement Naturel de Bandol, who applied different scientific techniques to prove biodegradation of d2w plastic in the marine environment, leaving no toxic residues.

The Study has dynamically combined and compared tests and studies performed directly in marine conditions as well as under laboratory conditions. Bacterial strains found in marine waters were used and incubated in marine waters under temperature conditions (> 18°C) usually found in the ocean.

The Study has proved that plastic biodegradation processes observed in laboratory conditions are transferable to real life marine conditions. The scientists have specifically confirmed that accelerated weathering does not invalidate the results of experiments.

The rate of biodegradation and the ratio between biomass creation and CO2 production were also carefully studied.

Toxicity testing in Oxomar was more thorough than in any previous studies, and a wide variety of marine creatures at differing trophic levels were examined.

Scientific articles arising from this Study have already been published in scientific journals, and results have been presented at 13 international conferences.

Michael Laurier said “No government or customer can now be in any doubt that oxo-biodegradable plastic (as distinct from oxo-degradable plastic) does properly biodegrade in the open environment, and is not toxic. This is not therefore the type of material that the EU intended to prohibit and I trust that this and other scientific evidence will now dispel the confusion in the marketplace.”

**ABOUT OXOMAR:**

The OXOMAR project is a fundamental research project sponsored by The French National Research Agency and coordinated by the CNRS LOMIC. It combines the expertise of the public laboratories CNRS-LOMIC, CNRS-ICCF and IFREMER-Nantes, and CNEP and a partner from the United Kingdom SYMPHONY ENVIRONMENTAL TECHNOLOGIES PLC. The project started in October 2016.

**PUBLISHED PAPERS RESULTING FROM OXOMAR**

Eyheraguibel B, Leremboure M, Traikia M, Sancelme M, Bonhomme S, Fromageot D, Lemaire J, Lacoste J, Delort A.M. (2018). Environmental scenarii for the degradation of oxo-polymers. Chemosphere. 198 182-190

Eyheraguibel B, M. Traikia, S. Fontanella, M. Sancelme, S. Bonhomme, D. Fromageot, J. Lemaire, G. Laurenson, J. Lacoste, A-M. Delort (2017). Characterization of oxidized oligomers from polyethylene films by mass spectrometry and NMR spectroscopy before and after biodegradation by a Rhodococcus rhodochrous strain. Chemosphere.184, 366-374.

Dussud C, Hudec C, George M, Fabre P, Higgs P, Bruzaud S, Eyheraguibel B, Meistertzheim AL, Jacquin J, Cheng J, Callac N, Odobel C, Rabouille S, Ghiglione JF (2018). Colonization of non-biodegradable and biodegradable plastics by marine microorganisms. Frontiers in microbiology (IF 4.52) 9:1571.

Odobel C, Dussud C, Conan P, Pujo-Pay M, Meistertzheim AL, Eyheraguibel B, Delort AM, Ter Halle A, Bruzaud S, Barbe V, Ghiglione JF. Long-term colonization (7 months) of non-biodegradable and biodegradable microplastics by marine bacteria. Frontiers in microbiology (IF 4.52), submitted for publication.

Further Information: <https://anr.fr/Project-ANR-16-CE34-0007>

**NOTE TO EDITORS**

**ABOUT SYMPHONY** [www.symphonyenvironmental.com](http://www.symphonyenvironmental.com)

Symphony has a diverse and growing customer-base and has established itself as an international business with 77 distributors around the world. Products made with Symphony's plastic technologies are now available in nearly 100 countries in many different applications. Symphony itself is accredited to ISO 9001 and ISO 14001.

Symphony is a member of The OPA (www.biodeg.org) and actively participates in the Committee work of the British Standards Institute (BSI), the American Standards Organisation (ASTM), the European Standards Organisation (CEN), and the International Standards Organisation (ISO).

Symphony’s d2w® is found on thousands of tons of plastic bags all over the world. This technology was developed to tackle the problem of plastic packaging which escapes collection for recycling and ends up in the open environment as litter, where it will biodegrade much more quickly than ordinary plastic.

Symphony has also developed a range of additives, concentrates and masterbatches marketed under its d2p (designed to protect) logo. d2p can be incorporated into a wide variety of plastic and non-plastic products to give them protection against many different types of bacteria, viruses, fungi, algae, insects, fouling and fire. Our d2p antimicrobial plastic has been tested at The Institute of Biology at UNICAMP University in Brazil, and found to kill 99.9% of viruses within one hour.

Further information on the Symphony Group can be found at [www.symphonyenvironmental.com](http://www.symphonyenvironmental.com) and twitter @SymphonyEnv See also Symphony on Instagram and Facebook. A Symphony App is available for downloading to smartphones.

Facebook: Symphonyenvironmental  - <https://www.facebook.com/symphonyenvironmental/>

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Website:  [www.symphonyenvironmental.com](http://www.symphonyenvironmental.com/)

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