Certification of d_2w

This is to certify the following verification of the technical specification and performance of d2w

d_2w is an additive formulation that renders conventional polyolefins oxo-biodegradable.

"Oxo-biodegradation" is "degradation identified as resulting from oxidative and cell-mediated phenomena, either simultaneously or successively" ("Terminology in the field of degradable and biodegradable Polymers and Plastics" CEN/TR 15351).

Polyolefin products made with d2w additive will abiotically degrade in the presence of oxygen. Degradation has been proved in accordance with the requirements of ASTM 6954-04 by passing ASTM 5510 (RAPRA Report 46095).

The ability of d_2w products to comply with the biotic (biodegradation) tests of ASTM 6954-04 has been demonstrated by the loss of molecular mass achieved after abiotic thermal degradation, resulting in ultimate biodegradation of the material into CO2, water, mineral salts and biomass (RAPRA Report 46303, Pyxis report 30.7.05, and DPPA Chapt. 3, Eco-sigma Report Sept. 2008).

The eco-toxicity sections of EN 13432 and ASTM 6954-04 require that no harmful residues are left - this has been verified for d_2w additive. (OWS Report MST-4/1-d2wb&d2wc, Eco-Sigma Report Sept. 2008).
d_2w additive does not contain heavy metals (defined by 94/62/EC Art 11 as lead, mercury, cadmium, or hexavalent chromium).
d_2w additive is safe for direct food-contact according to the European Union requirements for Direct Food Contact 1935/2004/EC and the US FFDC Act and regulations (RAPRA report 46137, and Keller & Heckman certificate 18.2.2009). It is the responsibility of the manufacturers of products intended for food-contact to ensure that all other materials incorporated by them comply with those requirements.

If polymer products are correctly made with d_2w, the additive will have no effect upon the strength and other performance characteristics of the product during its programmed service-life. Polymer products correctly made with d2w comply with the Essential Requirements of the EU Packaging Waste Directive 94/62/EC Annex II paras. 1, 2 and 3(a) (b) and (d).
In addition to the above, d_2w Additives and finished products have been extensively tested, according to the test methods prescribed in the UAE Standard 5009/2009, British Standard BS8472 and KSA Standard 2879/2016.
d_2w products can met AFNOR TC51-808 Accord.

If sent to landfill d_2w oxo-biodegradable plastics will degrade in aerobic conditions. In anaerobic conditions they become inert and will not emit methane. d_2w oxo-biodegradable plastics can be recycled together with ordinary oil-based plastics. For long-life products, stabilisers should be added if necessary.

Symphony's d_2w® technology is the only oxo-biodegradable plastic additive certified by ABNT under the Environmental Quality – Eco-Label program Internationally accredited by INMETRO – Certificate no 365.001/14

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MICHAEL LAURIER
CEO

FM37939 EMS 567450 | Oxo-biodegradable Plastics Association | Market of London Stock Exchange | Society of Plastics Engineers (US) | Millennium Award | ASTM Standards Worldwide | Society of the Chemical Industry (UK)

Symphony Environmental Ltd is a subsidiary of Symphony Environmental Technologies Plc 6 Elstree Gate, Elstree Way, Borehamwood, Hertfordshire WD6 1JD Tel: +44 208 207 5900 - Fax: +44 208 207 7632 www.d2w.net - info@d2w.net

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