



Certification of d₂w



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

d₂w 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 d₂w 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 d₂w additive. (OWS Report MST-4/1- d₂wb&d₂wc, Eco-Sigma Report Sept. 2008).

d₂w additive does not contain heavy metals (defined by 94/62/EC Art 11 as lead, mercury, cadmium, or hexavalent chromium).

d₂w 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 d₂w, 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, d₂w Additives and finished products have been extensively tested, according to the test methods prescribed in the UAE Standard 5009/2009 and BS8472.

d₂w products can meet AFNOR TC51-808 Accord.

d₂w oxo-biodegradable plastics are not currently intended for composting.

If sent to landfill d₂w oxo-biodegradable plastics will degrade in aerobic conditions. In anaerobic conditions they become inert and will not emit methane.

d₂w oxo-biodegradable plastics can be recycled together with ordinary oil-based plastics. For long-life products, stabilisers should be added if necessary.

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ISO 9001-2008
FM 37939



The European Organization
for Packaging and
the Environment



Sustainability programme
of NH Hotels



Oxo-biodegradable
Plastics Association



Market of London
Stock Exchange



Society of Plastics
Engineers (US)



Pacific Basin
Economic Council



Society of the
Chemical Industry (UK)



Committee Member
British Plastics
Federation



Committee Member
British Standards
Institute



Committee Member
CEN European Standards
Organization



Committee Member
ASTM Standards
Worldwide



Committee Member
International Organization
for Standardization