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PRESS RELEASE

Brussels, 18th November, 2019

Cavitated PE film 'VO+ LLDPE' by *Void Technologies* tested by RecyClass

The findings of an independent laboratory testing of 'VO+ LLDPE' technology show that it has minor recyclability issues and, therefore, it is suitable for recycling in a polyethylene (PE) film stream. This innovative structure is a blend of Linear Low-Density Polyethylene (LLDPE) and 'VO+' polymeric additives.

VO+ technology engineers a nano-voided structure into polymers to minimize the material used in a package by decreasing the polymer's density. This technology, based on polymeric additives and orientation processes, delivers reduced density, barrier function, enhanced mechanical properties, and high opacity (without using titanium dioxide).

According to the results of the laboratory which were carried out as per the RecyClass Recyclability Evaluation Protocol for PE films, 'VO+ LLDPE' technology conforms to the current European PE film recycling stream provided it is used under specific conditions. These include, among others, the requirement on the maximum density of the printed film which cannot exceed 1 g/m^3, as well as the compatibility of the printing technology with the RecyClass design for recycling guidelines. Another precondition is the presumption that 'VO+ LLDPE' does not exceed 10% of the whole European LDPE flexible film market share. In case this threshold is exceeded, further testing will be required, and the current approval will be subject to a review.

The film samples obtained from the conversion process of the recycled material generated by extruding 'VO+ LLDPE' show minimal differences to the film without the innovation, with a minor visual appearance discrepancy, as no haze increase neither high level of gels was detected. Therefore, the recycled material was attested as relevant for high-value applications.

Consequently, within RecyClass grading system (on the scale from A to F, which resembles the EU energy efficiency scale), the 'VO+ LLDPE' technology can be ranked maximally as class *B*[1]. This class

[1] **Under the condition that other components of a package are in accordance with the RecyClass guidelines: https://recyclass.eu/recyclass/design-for-recycling-guidelines/**

implies that a package has ‘some minor recyclability issues’ and therefore proves to advance quality recycling.

The results will be incorporated in the RecyClass ‘Design for Recycling Guidelines’ as well as the RecyClass online tool which are one of the components of the guidance for the recyclability evaluation. They contribute as well to the constructive developments within the design for recycling discussion on PE films and, more importantly, working towards improving recycling rates of this stream.

About
RecyClass is a comprehensive cross-industry initiative that works to advance plastic packaging recyclability within Europe. RecyClass assesses recyclability and provides specific recommendations on how to improve packaging design to fit current recycling technologies. Activities within RecyClass include the development of Recyclability Evaluation Protocols and testing of innovative materials. Findings are used to update the RecyClass Design for Recycling guidelines and the online free tool.
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About
VOID Technologies is a materials science company spun out of Kimberly-Clark to commercialise the VO+ technology. VOID’s business model is based on supplying VO+ additive masterbatches to film manufacturers. VOID is headquartered in London, UK and has R&D and manufacturing in Wisconsin, USA.
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