RecyClass™

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Albéa

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 19 August 2020
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DISCLAIMER

RecyClass recognition applies only to Albéa 'Greenleaf™ 2nd Genreration' technology reported in Annex I. The recyclability assessment therefore does not refer to the testing of a specific packaging using this technology. Any specific packaging using this technology would need to be tested individually to demonstrate that the system of resin, adjuvants, label, closure, and printing conforms to the RecyClass Recyclability Evaluation Protocol for HDPE containers, and that it is sorted in the HDPE rigid stream at the state-of-art sorting plants in Europe.
Publication of results of testing of this technology MUST clearly include all the conditions listed in the approval letter. Partial reporting of the conditions is forbidden.
Additionally, any change in the formulation of the technology must be communicated to the Technical Committee which will reassess the approval of the technology.

The RecyClass HDPE Technical Committee was requested to carry out an assessment of the technology 'Greenleaf™ 2nd Generation' by Albéa to verify its impact on the quality of recycled HDPE containers.

The technology is a white multi-layer HDPE tube coloured with green printing on the surface without cap. The EVOH barrier concentration represents 5.8 % of the total weight of the packaging, with 4.4 % PE tie layers (maleic anhydride grafted).The inks applied on the tube are acrylic-based.

According to the results that were obtained from the laboratory tests done by Plastics Forming Enterprise (PFE), carried out as per the APR HDPE Critical and Application Guidance testing protocols, 'Greenleaf™ 2nd Generation' technology is fully compatible with coloured HDPE recycling.

Based on these results, RecyClass acknowledges that Albéa 'Greenleaf™ 2nd Generation' technology will not have a negative impact on the current European HDPE containers recycling and provided that the packaging using this technology is designed under the following conditions[1]:

a) The packaging is made of PE ;
b) The maximum EVOH concentration is 5.8 % by weight and provided by 4.4 % PE layers;
c) The density of the finished tube is lower than 1 g/cm^3;
d) The inks and varnishes are acrylic-based UV cured, and represent less than 1 % of the total weight of the packaging, or less;

[1] **HDPE containers designed under conditions other than those indicated need to be tested to assess their compliance with RecyClass Recyclability Evaluation Protocol for HDPE containers.**

e) Closures, liners, seals and valves, as well as any other components are made of PE;

f) Any additional component or feature of the packaging must be compliant with the corresponding RecyClass Design for Recycling Guidelines[2].

RecyClass concludes that Albéa 'Greenleaf™ 2nd Generation' technology as per current market conditions and knowledge, is fully compatible with the existing European industrial recycling processes for HDPE containers if processed in the coloured HDPE stream. Indeed, the recycled plastic generated after the recycling process was successfully tested in high-value application such as HDPE bottles up to 25 % concentration[3].

In regard to RecyClass Recyclability Certification, the present full compatibility with HDPE containers recycling delivered to Albéa 'Greenleaf™ 2nd Generation' technology, means that a packaging containing the Albéa 'Greenleaf™ 2nd Generation' as mentioned in the aforementioned conditions will not be penalised with any Recyclability Class downgrade. Moreover, the amount of recyclable PE will impact the final Recyclability Class obtained during Recyclability Certification and should be kept above 95 % or 90 % in the final packaging to maximise chances to get a Recyclability Certificate with a Class A or B, respectively[4]. Also, it is noteworthy that the presence of additional packaging features could impact the certification process.

RecyClass approval is referred to the above conditions and in particular the necessity to equip the tube with a PE cap. Thus, a review of the current PP closure of the package is strongly recommended.

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[2] Design for Recycling Guidelines - RecyClass

[3] Recyclability Evaluation Protocol for HDPE containers

[4] RecyClass Recyclability Certification

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Annex I

Figure 1: 'Greenleaf™ 2nd Generation' *coloured HDPE tube without cap by Albéa.*