RecyClass

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Albéa

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 12 October 2022

DISCLAIMER

RecyClass recognition applies only to Albéa '(Re)flex' technology reported in Annex I. The recyclability assessment therefore does not refer to the testing of a specific packaging using this tube. Any specific packaging using this tube 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 *'(Re)flex'* by Albéa to verify its impact on the quality of recycled HDPE containers.

The technology is a laminated tube, provided with a HDPE shoulder and flip-top cap. The EVOH barrier concentration is about 2 wt%, while the solvent-based aliphatic laminating adhesive represents less than 1 wt%. The tube is metallised and direct printed. The optical density of the metallised layer is below 2.2, while the amount of ink and varnish is less than 1% of the total weight of the packaging.

According to the results that were obtained from the laboratory test by Plastics Forming Enterprises (PFE), carried out as per the APR HDPE-CG-01 Critical Guidance and APR HDPE-A-01 Application Guidance[1], the '(Re)flex' technology is considered to be fully compatible with coloured HDPE recycling. Additionally, the sortability of the packaging has been tested by CIRCPACK following the RecyClass Sorting Protocol[2]. The results showed that 94% of the tubes were successfully sorted in the HDPE rigid stream.

Based on these results, RecyClass acknowledges that Albéa '(Re)flex' will have no negative impact on the current European HDPE coloured containers recycling and provided that the packaging is designed under the following conditions:

a) The tube and its cap are made of PE;
b) The maximum EVOH concentration is below 2 % respect to the packaging total weight;

[1] APR HDPE-CG-01Critical Guidance & APR HDPE-A-01 Application Guidance

[2] Sorting Evaluation Protocol for Plastic Packaging

c) EVOH is compatibilized with LDPE tie layers grafted with maleic anhydride, with an EVOH: tie layer ratio lower than 1.7:1;

d) The density of the packaging is lower than 1 g/cm^3;

e) The laminating adhesive is a solvent based aliphatic polyurethane, and represents less than 1% of the total weight of the packaging;

f) The metallised layer has an optical density of 2.2, or less;

g) Ink and varnish combined represent less than 1% by weight of the total packaging weight;

h) No additional printing technology are applied, and in any case, it is the responsibility of the end-user to choose an appropriate combination of inks and printing process to ensure that:

   i. the inks are non-bleeding;

   ii. the inks comply with the European Legislation (e.g. Packaging and Packaging Waste Directive on the heavy metal concentration levels) and are EUPIA compliant;

   iii. direct printing is limited as much as possible (see Annex I);

RecyClass concludes that Albéa '(Re)flex' as per current market conditions and knowledge, is fully compatible with the existing European industrial recycling processes for coloured HDPE containers. 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].

Similar executions of '(Re)flex' technology with the only modification of artworks would not have to be tested again as long as the direct printing decoration amount and the components proportion remain the same.

In regard to RecyClass Recyclability Certification, the present full compatibility with coloured HDPE containers recycling approval delivered to Albéa '(Re)flex' technology, means that a packaging containing the Albéa '(Re)flex' as mentioned in the aforementioned conditions will not be penalised with a Recyclability Class downgrade. Nevertheless, the amount of recyclable PE will impact the final Recyclability Class obtained during Recyclability Certification[4]. Also, it should be noteworthy that the presence of additional packaging features could impact the certification process.

[3] APR HDPE-A-01 Application Guidance

[4] RecyClass Recyclability Certification

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About RecyClass

RecyClass is a non-profit, cross-industry initiative advancing recyclability, bringing transparency to the origin of plastic waste and establishing a harmonized approach toward recycled plastic calculation & traceability in Europe. RecyClass develops Recyclability Evaluation Protocols and scientific testing methods for innovative plastic packaging materials which serve as the base for the Design for Recycling Guidelines and the RecyClass Online Tool. RecyClass established Recyclability Certifications for plastic packaging, Recycling Process Certification and Recycled Plastics Traceability Certification for plastic products.

RecyClass – Plastic Future is Circular

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Annex I

Figure 1. '(Re)flex' metallised laminated tube by Albéa