

*Albéa*

RECYCLASS TECHNOLOGY APPROVAL

*Brussels, 19<sup>th</sup> August 2020*

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

The tube is a white coloured with green printing on the surface multi-layer tube excluding cap. The EVOH barrier concentration is 6% of the total weight of the packaging, with more than 3% PE tie layers grafted with at least 0,1 % maleic anhydride.

According to the results that were obtained from the laboratory tests done by Plastics Forming Enterprise and carried out as per the APR HDPE Critical and Application Guidance testing protocols, Albéa tube technology is compatible with coloured HDPE recycling.

Based on these results, RecyClass certifies that Albéa 'Greenleaf™ 2<sup>nd</sup> Generation' tube technology will not have a negative impact on the current European HDPE containers recycling if the concentration of this tube in the feedstock of HDPE waste packaging attaining the gate of a European recycler is not exceeding 5%, and provided the full packaging using this tube as the body is designed under the following conditions:

- a) The body is made of PE ;
- b) The maximum EVOH concentration is 6% by weight and provided by more than 3% PE layers, grafted with a minimum concentration of 0,1% of maleic anydryde;
- c) The density of the finished tube is lower than 1 g/cm<sup>3</sup>;
- d) Closures, liners, seals and valves, as well as any other components are made of PE;
- e) Applied printing technology is compatible with recycling; since several printing options are possible, 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 'Greenleaf™ 2<sup>nd</sup> Generation' tube as per current market conditions and knowledge, is 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.

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.

RecyClass recognition applies only to Albéa 'Greenleaf™ 2<sup>nd</sup> Generation' tube reported in Annex I and is not a recyclability assessment of specific packaging using this tube as body. Any specific packaging using this tube as body would need to be tested individually to demonstrate the system of resin, adjuvants, label, and closure conformed to the RecyClass Recyclability Evaluation Protocol for HDPE containers, and that it is sorted in the HDPE stream at the state of art sorting plants in Europe.

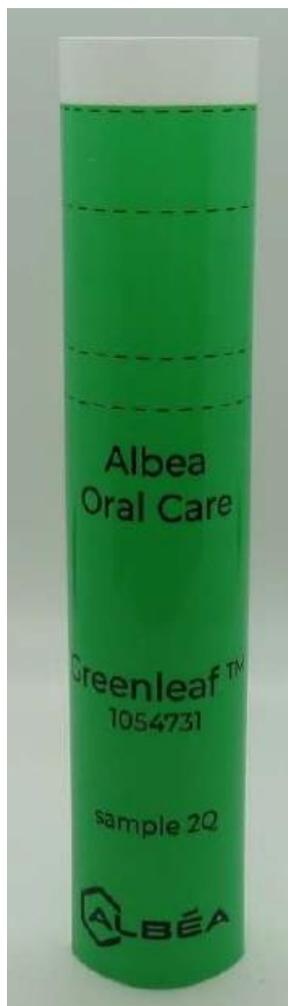
Any change on the formulation of the technology must be communicated to the Technical Committee which will reassess the approval of the technology.

*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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## Annex I



*Figure 1 Greenleaf coloured HDPE tube without cap by Albea*