RecyClass™

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Colgate-Palmolive

RECYCLASS TECHNOLOGY APPROVAL

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The RecyClass HDPE Technical Committee was requested to carry out an assessment of the technology 'S.-VF1' by Colgate-Palmolive known as 'Samson Technology' in the US to verify its impact on the quality of recycled HDPE containers.

The innovative packaging is a decorated multi-layer toothpaste tube made from a conventional laminate tube making machine, which mounts the tube sleeve onto the tube shoulder assembly. The shoulder assembly contains a HDPE shoulder and a PET insert. The EVOH barrier concentration is 5% of the total weight of the package.

According to the results that were obtained from the laboratory test by the Institut für Kunststofftechnologie und -recycling (IKTR), carried out as per the Recyclability Evaluation Protocol for HDPE containers, the tube is considered to be compatible with HDPE recycling; however, equally it has an impact on the recycling process due to around 20% mass losses because of the PET insert.

RecyClass certifies that 'S.-VF1' will not have a negative impact on the current European HDPE containers recycling provided that tubes are designed only under the following conditions:

a) The body is made of PE and it is designed in white;
b) The functional barrier is lower or equal to 5% by weight respect to the tube total weight;
c) The density of the finished tube is lower than 1g/cm^3;
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);

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

f) It is presumed that the 'S.-VF1' tube does not exceed 5% of the whole European HDPE containers market share. If this threshold is exceeded, further testing will be required and the approval will be subject to review.

RecyClass concludes that 'S.-VF1' tube as per current market conditions and knowledge, is compatible with the existing European industrial recycling processes for HDPE containers. The recyclates generated after the recycling process may be used in high quality applications such as HDPE bottles. Nonetheless, as already mentioned, the presence of a PET part with a weight of 20% on total, does not allow to reach a high recycling yield. Thus, a review of this part of the package is recommended. RecyClass recognition applies only to the Colgate-Palmolive 'S.-VF1' tube and not to any specific tube as each package 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.

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 Samson technology tube by Colgate-Palmolive

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