RecyClass

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Colgate

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 09 November 2021

DISCLAIMER

RecyClass recognition applies only to Colgate 'Samson Tube with Colgate Total artwork' technology reported in Annex I. It, therefore, does not concern to a recyclability assessment of 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 'Samson Tube with Colgate Total artwork' by Colgate to verify its impact on the quality of recycled HDPE containers.

The technology is a printed HDPE tube containing EVOH compatibilized with PE-g-MAH tie layers tested without cap. The barrier-sleeve technology with HDPE shoulders and PET insert has already been tested and approved by the HDPE TC in 2020[1]. Printing artwork of 'Samson Tube with Colgate Total artwork' consists in blue and red tones, and represents less than 0,9% of the total weight of the tested technology, taken into account both inks and varnish (*cf*: Annex I).

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, 'Samson Tube with Colgate Total artwork' technology is considered to be fully compatible with coloured HDPE recycling, equally it has an impact on the recycling process due to around 20% mass losses because of the PET insert.

Based on these results, RecyClass certifies that Colgate 'Samson Tube with Colgate Total artwork' technology will not have a negative impact on the current European coloured HDPE containers

[1] 'S.-FV1' approval by Colgate released in January 2020.

recycling and provided that the full packaging using this tube as the body is designed under the following conditions:

a) The tube and its shoulders are made of clear or white PE, with a prevalence of HDPE;
b) The maximum EVOH concentration is below 5 wt% and provided by more than 2,5 wt% PE tie layers, grafted with a minimum concentration of 0,1% of maleic anhydride;
c) The density of the finished tube is lower than 1 g/cm^3;
d) The insert is preferably made of clear or white PE, or alternately made of PET;
e) The cap is made of clear or white PE;
f) Applied printing technology represents 0,9%wt or less, taken into account both inks and varnish;
g) 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, using preferably light colours.

RecyClass concludes that Colgate 'Samson Tube with Colgate Total artwork' technology 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[2].

It should be noteworthy that due to the mass loss of the PET insert, the recycling yield of the packaging is significantly reduced. As the first design requirement for recycling is to maximise the amount of the main plastic, the RecyClass Methodology[3] penalizes yield losses greater than 10% from 2 classes. Therefore, RecyClass HDPE Technical Committee recommends the applicant to replace the PET insert by a PE insert.

Moreover, application of PP cap on an HDPE tube, as well as of extensive printing, reduce the quality of recycled plastic generated by the tube, by limiting its compatibility with HDPE recycling.

[2] Recyclability Evaluation Protocol for HDPE containers

[3] RecyClass Recyclability Methodology

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About

RecyClass is a comprehensive cross-industry initiative that works to advance plastic packaging recyclability and to establish a harmonized approach towards recycled content calculation and traceability in Europe. Activities within RecyClass include the development of Recyclability Evaluation Protocols and scientific testing of innovative materials which serve as the base for the Design for Recycling guidelines and the free online tool. RecyClass offers Recyclability Certifications and Recycled Content Traceability Certification for plastic packaging.

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Annex I

Samson Tube with Colgate Total artwork *sleeve technology and artwork by Colgate*