RecyClass

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BASF

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 28 March 2025

DISCLAIMER

RecyClass recognition applies only to BASF 'Epotal CF 305' technology reported in Annex I. The recyclability assessment therefore does not refer to the testing of a specific packaging using this laminating adhesive. Any specific packaging using this acrylic laminating adhesive 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 PE films, and that it is sorted in the PE flexible 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 PO films Technical Committee was requested to carry out an assessment of the technology 'Epotal CF 305' by BASF to verify its impact on the quality of recycled PE flexible packaging.

The technology is a water-based acrylic laminating adhesive. The tested structure consisted in an LDPE/laminating adhesives/LDPE film with the 'Epotal CF 305' as a laminated layer, and representing 2.8 wt% of the total weight of the film. The film has been tested unprinted.

According to the results that were obtained from the laboratory test performed by Proplast, carried out as per the Recyclability Evaluation Protocol for Laminating Adhesives applied on PE films (version 1.0) used for RecyClass acrylics laminating adhesives test campaign[1], the 'Epotal CF 305' technology is considered to be fully compatible with coloured PE flexibles recycling and limited compatible with natural PE flexibles recycling.

Based on these results, RecyClass acknowledges that BASF 'Epotal CF 305' technology will have no negative impact on the current European coloured PE flexibles recycling provided that PE flexible films using this technology are designed only under the following conditions[2]:

a) The density of the PE film is below 0.97 g/cm^3:
b) The water-based acrylic laminating adhesive 'Epotal CF 305' represents 2.8 wt% of the total weight of the film, or less;

[1] Technical Review

[2] **PE films designed under conditions other than those indicated need to be tested to assess their compliance with Recyclass Recyclability Evaluation Protocol for PE films.**

c) Any components or attachments to the packaging should be preferably made of clear PE;

d) Any additional component or features (inks, adhesives, …) of the packaging must be compliant with the corresponding RecyClass Design for Recycling Guidelines[3].

RecyClass concludes that BASF laminating adhesive 'Epotal CF 305' technology as per current market conditions and knowledge, is fully compatible with the existing European industrial recycling processes for coloured PE flexibles. The plastic generated by the recycling process may be used in high quality applications such as PE blown films up to 25 %[4].

In regard to RecyClass Recyclability Certification, the present full compatibility with coloured PE flexibles recycling delivered to 'Epotal CF 305' technology, means that a coloured package based on PE film containing this technology, 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 and should be kept above 95 % or 80 % in the final packaging to maximise chances to get a Recyclability Certificate with a Class A or B, respectively[5]. Also, it is noteworthy that the presence of additional packaging features, like inks or barrier material, could additionally impact the certification process.

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[3] Design for Recycling Guidelines - RecyClass

[4] Technology tested according to the RecyClass Recyclability Evaluation Protocol for Laminating Adhesives applied on PE films

[5] RecyClass Recyclability Certification

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Annex I

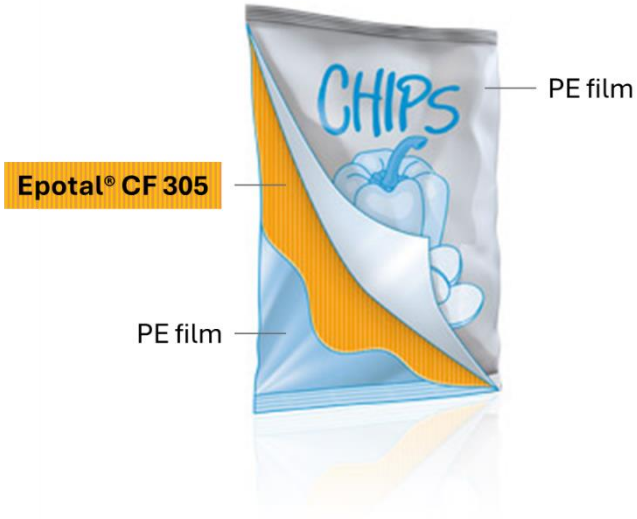

Figure 1. 'Epotal CF 305' *technology by BASF used as laminating adhesive*