

Enkase™ Fluorinated HDPE bottles: new technology approval by RecyClass

The RecyClass HDPE Technical Committee was requested to carry out an assessment of the Enkase™ fluorination barrier technology by Inhance Technologies to verify its impact on the quality of recycled HDPE containers. Enkase™ barrier technology is used to prevent numerous ingredients found in product formulations from permeating through the container walls, thereby maintaining product efficacy and increasing its shelf life.

According to the results that were obtained from the laboratory tests by Plastics Forming Enterprise, carried out as per the APR HDPE Critical Guidance Document testing protocols and the Bottle-to-Bottle Protocol, Inhance Technologies' Enkase™ barrier technology is compatible with recycling.

RecyClass certifies that Inhance Technologies' Enkase™ barrier technology will not have a negative impact on the current European HDPE containers recycling provided that containers are designed under the following conditions:

- a) The body is made only with HDPE and it is designed natural or colourless;
- b) No functional barriers are included in the body (i.e. EVOH, PA, PVDC);
- c) The density of the finished packaging is lower than 1g/cm³;
- d) Labels/Sleeves applied to the containers are made with PE and are provided with a water-soluble adhesive (at temperature lower than 40 °C);
- e) Closures, liners, seals and valves, as well as any other components are made with PE;
- f) 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 to laser marked or production and expiry date.
 - iv. The Enkase™ barrier technology of Inhance Technologies does not exceed 10% of the whole European HDPE containers market share.

RecyClass concludes that Inhance Technologies' Enkase™ barrier technology as per current market conditions and knowledge, is compatible with the existing European industrial recycling processes for HDPE containers. RecyClass recognition applies only to the Inhance Technologies' Enkase™ barrier technology and not necessarily to any specific bottle as each package must be tested individually to demonstrate the system of resin, adjuvants, label, and closure conform 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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