

Silgan Dispensing

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 12 September 2022

Reviewed: Brussels, 28 December 2023

DISCLAIMER

RecyClass recognition applies only to Silgan Dispensing 'Trigger Sprayer SP05R' technology reported in Annex I. The recyclability assessment therefore does not refer to the testing of a specific packaging using this pump. Any specific packaging using this pump 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 'Trigger Sprayer SP05R' by Silgan Dispensing to verify its impact on the quality of recycled HDPE containers.

The technology is a PP pump made of ten individual components, provided with its associated white HDPE container. All the pump components were supplied clear, except for a white sealing ring. The pump is made of about 86.8 % of PP and 12.5 % of PE and 0.7 % of EBA (Ethylene Butyl Acrylate). The gasket is made of expanded polyethylene (EPE). Compared to the overall packaging weight, the trigger counts for 35.4 wt% and PP content counts for 30.7 wt%.

According to the results that were obtained from the laboratory tests done by the Institut für Kunststofftechnologie und -recycling (IKTR), carried out as per the Recyclability Evaluation Protocol for HDPE containers, 'Trigger Sprayer SP05R' technology is limited compatible with HDPE recycling.

Based on these results, RecyClass acknowledges that Silgan Dispensing 'Trigger Sprayer SP05R' technology will have a limited impact on the current European HDPE containers recycling and provided that the full packaging using this trigger sprayer as closure system is designed under the following conditions:

- a) The trigger sprayer is made of colourless PP components (*for natural PP packaging only*);
- b) The coloured valve must be replaced with a transparent or white one (*for natural PP packaging only*);

- c) The trigger sprayer counts for 35.4 % of the total weight of the HDPE containers;
- d) The PP components represent 86.8 % of the total weight of the trigger sprayer or less, counting for less than 31 % of the total weight of the HDPE containers;
- e) The EPE gasket is representing 0.7 % of the total weight of the trigger sprayer or less;
- f) The EBA-based valve represents 1 % of the total weight of the pump or less;
- g) All components of the pump are lower than 1 g/cm³;
- h) The pump is designed to allow consumers to access as much as possible the product, i.e. the amount of product left should be lower than 5 % of the total packaging weight.
- i) Any additional component or features (e.g. inks, adhesives, etc) of the packaging must be compliant with the corresponding RecyClass Design for Recycling Guidelines¹.

RecyClass concludes that Silgan Dispensing 'Trigger Sprayer SP05R' technology as per current market conditions and knowledge, is limited compatible with the existing European industrial recycling processes for HDPE containers. Indeed, the recycled plastic generated after the recycling process was successfully tested in blow-moulding applications up to a concentration of 25 % innovation².

In regard to RecyClass Recyclability Certification, the present full compatibility with HDPE containers recycling delivered to Silgan Dispensing 'Trigger Sprayer SP05R' technology, means that a packaging containing this technology, as mentioned in the aforementioned conditions will be penalised with one Recyclability Class downgrade. Moreover, the amount of recyclable PE will impact the final Recyclability Class obtained during Recyclability Certification and should be kept above 95 % or 90 % in the final packaging to maximise chances to get a Recyclability Certificate with a Class B or C, respectively³. Also, it is noteworthy that the presence of additional packaging features could impact the certification process.

The present PP-based trigger sprayer should preferably be used on PP container in order to optimize recyclability. It should be noteworthy that the use of this PP-based trigger sprayer on HDPE containers will reduce the quality of HDPE recycled plastic, as the PP compatibility with PE recycling is limited. Therefore, the HDPE Technical Committee recommends to increase the proportion of PE in the trigger for applications on HDPE containers.

About RecyClass

RecyClass is a non-profit, cross-industry initiative advancing recyclability, bringing transparency to the origin of plastic waste and establishing a harmonized approach toward recycled plastic calculation & traceability in Europe. RecyClass develops

¹ [Design for Recycling Guidelines - RecyClass](#)

² [Recyclability Evaluation Protocol for PP containers](#)

³ [RecyClass Recyclability Certification](#)

Recyclability Evaluation Protocols and scientific testing methods for innovative plastic packaging materials which serve as the base for the Design for Recycling Guidelines and the RecyClass Online Tool. RecyClass established Recyclability Certifications for plastic packaging, Recycling Process Certification and Recycled Plastics Traceability Certification for plastic products.

[RecyClass – Plastic Future is Circular](#)

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Annex I



Figure 1: Trigger Sprayer SP05R by Silgan Dispensing.