

Aptar

RECYCLASS TECHNOLOGY APPROVAL

Brussels, 6 September 2022

DISCLAIMER

RecyClass recognition applies only to Aptar 'SimpliCycle TPE-S valve' technology reported in Annex I. The recyclability assessment therefore does not refer to the testing of a specific packaging using this valve. Any specific packaging using this valve 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 PP containers, and that it is sorted in the PP 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 PP Technical Committee was requested to carry out an assessment of the technology 'SimpliCycle TPE-S valve' by Aptar to verify its impact on the quality of recycled PP containers.

The technology is a thermoplastic elastomer valve made of Styrenic Block Copolymers (TPE-S or TPS) that consisted of a white perforated middle piece assembled to a PP ring, provided with a PP-based silver cap. The TPE-S valve represented less than 1% compared to the total packaging weight. Both valve and cap represented 20.2 % of the total weight of the packaging.

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 PP containers, 'SimpliCycle TPE-S valve' technology is considered to be **fully compatible with PP recycling**.

Based on these results, RecyClass acknowledges that Aptar 'SimpliCycle TPE-S valve' technology will have no negative impact on the current European PP containers recycling and provided that the full packaging using this valve is designed under the following conditions:

- a) The 'SimpliCycle TPE-S valve' is used within a PP-based colourless closure (for natural PP packaging only);
- b) The 'SimpliCycle TPE-S valve' is used on a colourless PP container (for natural PP packaging only),
- c) The 'SimpliCycle TPE-S valve' is colourless or white (for natural PP packaging only),

- d) The 'SimpliCycle TPE-S valve' represents 1% of the total weight of the packaging or less;
- e) The 'SimpliCycle TPE-S valve' density is lower than 1 g/cm³;
- f) The closure system (cap + valve) represents 20.2% of the total weight of the packaging or less;

RecyClass concludes that Aptar 'SimpliCycle TPE-S valve' technology as per current market conditions and knowledge, is fully compatible with the existing European industrial recycling processes for PP containers. Indeed, the recycled plastic generated after the recycling process was successfully tested in injection moulding and blow moulding applications up to a concentration of 50% innovation¹.

In regard to RecyClass Recyclability Certification, the present full compatibility with PP containers recycling approval delivered to Aptar 'SimpliCycle TPE-S valve' technology, means that a packaging containing the Aptar 'SimpliCycle TPE-S valve' as mentioned in the aforementioned conditions will not be penalised with a Recyclability Class downgrade. Moreover, the amount of recyclable PP will impact the final Recyclability Class obtained during Recyclability Certification². Also, it should be noteworthy that the presence of additional packaging features could impact the certification process.

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 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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¹ [Recyclability Evaluation Protocol for PP containers](#)

² [RecyClass Recyclability Certification](#)

Annex I



Figure 1 'SimpliCycle TPE-S valve' by Aptar