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## **TOYOBO GS Catalyst®, an eco-friendly aluminum catalyst for polyester polymerization, receives recognition for APR Design® for Recyclability**

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Toyobo Co., Ltd. is pleased to announce that its TOYOBO GS Catalyst®, an eco-friendly aluminum catalyst for polyester polymerization that is free of heavy metals, has been recognized as meeting or exceeding the voluntary requirements for APR Design® for Recyclability.

In announcing the recognition, the Association of Plastic Recyclers (APR), a US-based international industry organization for plastic recycling, noted that the Toyobo product meets or exceeds the strictest guidance criteria of its Critical Guidance Recognition Pathway.



PET resins (front) produced using TOYOBO GS Catalyst® and PET resins produced with antimony catalyst (back right) and with titanium catalyst (back left).

Use of TOYOBO GS Catalyst®



Use of antimony catalyst



Use of titanium catalyst



These photos show how melted PET resins, produced using TOYOBO GS Catalyst®, antimony, and titanium as catalysts from left to right, change in appearance after being exposed to heat of 300 degrees Celsius for two hours.

In 2002, Toyobo succeeded in developing the world's first aluminum-based catalyst for manufacturing PET resins, although general PET polymerization catalysts were composed of heavy metal such as antimony. PET resins using the heavy metal-free TOYOBO GS Catalyst® have a much smaller environmental impact and are conducive to recycling due to their outstanding thermal stability. This stability helps prevent deterioration from repeated melting and molding.

Based on third-party testing results of the PET resins manufactured using TOYOBO GS Catalyst®, APR judged that the product meets or exceeds the strictest guidance criteria of the Critical Guidance Recognition pathway, leading it to receive APR recognition.

PET resins produced by using TOYOBO GS Catalyst® have been adopted for plastic beverage bottles and plastic packaging films and solar cell backsheets, among others. As environmental awareness increases worldwide, expanded recycling of PET resins is expected not only for bottles, but also for fibers, films and molded items. With this APR recognition, Toyobo is committed to boosting its global sales, mainly in North America and Europe, helping realize a circular society.

### ■ **About the Association of Plastic Recyclers**

A US-based international organization representing the plastic recycling industry, it offers its own recognition to ensure recycled plastic is of high quality, along with assessment methods to evaluate its recyclability. Additionally, it supports a circular economy through educational activities. Toyobo joined APR as a member in 2023.

■ **About TOYOBO GS Catalyst®**

TOYOBO GS Catalyst®, developed by Toyobo in 2002, is the world's first aluminum catalyst for polyester polymerization, which is free of heavy metals like antimony. PET resins manufactured using this catalyst are highly transparent and exhibit superb thermal stability. This prevents resin deterioration during melting and molding, making it easier to implement eco-friendly measures. In 2017, Toyobo signed a licensing contract relating to a specific polymerization technology and its patents with Thailand-based Indorama Ventures Public Company Limited, the world's largest PET resin manufacturer\*, as part of its efforts to tap the global market.

\* Refer to Toyobo's press release dated September 21, 2017, titled "Toyobo promotes global use of its aluminum catalyst technology through polymerization technology licensing contract with world's largest PET producer, Indorama Ventures Pcl." [https://www.toyobo-global.com/news/2017/release\\_11.html](https://www.toyobo-global.com/news/2017/release_11.html)

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