

Contributing to reducing plastic volume
New development of the world's thinnest 20µm shrink film



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Toyobo is a specialty manufacturer of PET films in the shrink film market. Our policy is to boost our competitiveness through product development that is cutting-edge in terms of both performance and environmental consideration. Our production technology creates thinner films while maintaining strength, an achievement that cannot be imitated by others. In 2012, we succeeded in developing and launching SPACECLEAN[®], a heat shrinkable PET film that significantly cuts the mainstream 40µm thickness to a world's-thinnest 20µm. This product offers benefits not only in the environmental value of reducing plastic volume but also in terms of productivity, and has found use with many customers, mainly beverage producers.

In response to strong demands by customers, we will also start using recycled PET material from bottles to produce this 20µm film. In the past, the use of recycled raw materials yielded differing grades of product. We will further expand this and contribute to achieving customers' specific goals for sustainable packaging.

Along with the reduction of plastics, the reduction in use of virgin raw materials is also a pressing global issue. We plan to actively propose products made from recycled raw materials to our customers overseas as well. As PET labels are easier to recycle than polyvinyl chloride and polystyrene labels, we aim to build a resource circulation network for recycling containers that use shrink film, drawing on cooperation from brand owners, converters, and recycling business operators in overseas markets.



PET bottle labels made with SPACECLEAN[®] heat-shrinkable PET film

Contributing to the proliferation of next-generation energy and a carbon-neutral society
TEONEX[®] PEN film adopted for use in Toyota's fuel cell vehicles



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Our TEONEX[®] high-durability and heat-resistant polyethylene naphthalate (PEN) film is positioned as a de facto global standard, finding wide use in automotive applications in recent years. Since the early 2000s, we have proposed TEONEX[®] to the automotive market as a material that will contribute to innovation in highly anticipated, next-generation technologies for fuel cells. In 2020, we developed a sealing material that subjects TEONEX[®] to a proprietary adhesive coating and precision processing. This sealing material has been adopted for use in the "MIRAI" fuel cell automobile for its high durability even in high-temperature or other harsh environments, and for its contribution to ensuring long-term reliability in fuel cells. Changing from conventional vulcanized bonding to thermoplastic bonding with sealing material that uses TEONEX[®] has significantly improved cycle time from over 10 minutes to several seconds. This accomplishment earned the product the "Toyota Group Technology & Development Award" in fiscal 2021.

Fuel cell vehicles are the ultimate "eco-cars," emitting only water during operation. Fuel cell vehicles, including large buses, trucks, and passenger automobiles, are expected to become widespread throughout the mobility sector. In addition to bonding, TEONEX[®] provides functions including protection of power generation surfaces, insulation, and retention of gas intake/exhaust shape, contributing to technological innovation in fuel cells. The product is also expected to see use in water electrolytic hydrogen generators. The use and evaluation of TEONEX[®] is advancing in hydrogen-related markets around the world. TEONEX[®] holds potential as a key component supporting the hydrogen society of the future, and is indispensable as a material for proliferation of next-generation energy and the achievement of a carbon-neutral society.



"MIRAI" fuel cell vehicle, an adopter of TEONEX[®]