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For immediate release

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## **Yokohama Rubber significantly reduces the weight of automotive air-conditioning hose by using a rubber–resin polymer alloy**

Tokyo—The Yokohama Rubber Co., Ltd., has succeeded in developing a material that significantly reduces the weight of automotive air-conditioning hoses. The company is now accelerating the development of a commercial product and aims for a full market launch in 2024.

The new ultralight hose is made from a rubber–resin polymer alloy\*<sup>1</sup> developed by applying Yokohama Rubber’s proprietary technologies. This new alloy combines the flexibility and heat resistance of rubber with the high gas barrier properties of resin, and its use enabled Yokohama Rubber to reduce the hoses weight by 50%. In addition, hoses made using this alloy do not need to be put through a vulcanization process that uses a large amount of heat. The new hoses will therefore contribute to the effort to achieve carbon neutrality. One of Yokohama Rubber’s strengths is its design and evaluation capabilities that enable it to integrate hoses and pipes in ways that respond to various customer requirements and piping layouts. The company plans to develop and promote all-resin piping to achieve a significant reduction in the weight of hose and pipe combinations. While continuing to develop a commercial version of this new lightweight hose, Yokohama Rubber also aims to enter the market for other types of automotive pipes.

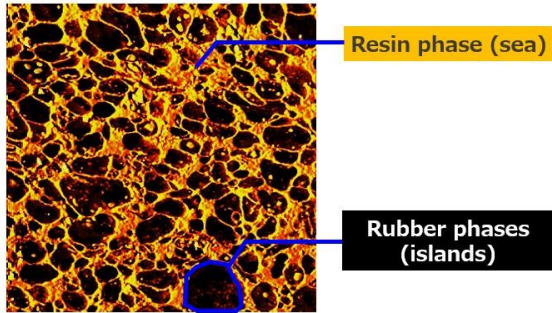
The operating environment surrounding the automotive industry is entering a period of dramatic change being driven by the trends toward, CASE\*<sup>2</sup>, MaaS\*<sup>3</sup>, and DX\*<sup>4</sup> (Digital Transformation). In addition, countries around the world are accelerating decarbonization efforts to achieve carbon neutrality by 2050, which is promoting a shift to next-generation environment-friendly vehicles. In this environment, reducing vehicle weight has become a key requirement for extending vehicle range and improving fuel efficiency. Accordingly, the need for lighter automotive parts is becoming even greater than before.

Yokohama Rubber’s Hose & Couplings business manufactures and sell products that support many industries, such as rubber and resin high-pressure hoses. The company delivers its automotive air-conditioning hoses to automobile makers in Japan, North America, and other countries. Yokohama Transformation 2023(YX2023), the new medium-term management plan introduced in February this year, positions the Hose & Couplings business as one of its MB Division’s growth drivers. Yokohama Rubber therefore will continue to promote the development of original hose piping that responds to next-generation environmental needs.

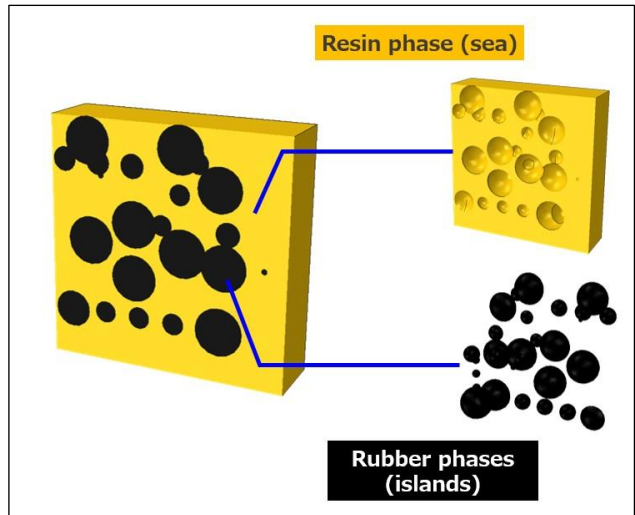
**For more detailed product information, see the website below.**

URL : <https://www.y-yokohama.com/global/product/mb/hose-coupling/news/002/>

- \*1 : A sea-island structure in which the sea phase is composed of resin and the island phase is composed of rubber
- \*2 : An acronym representing the trend in automobiles toward “Connected”, “Autonomous”, “Shared & Services (sometimes only “Shared”) and “Electric”
- \*3 : An acronym for Mobility as a Service—the provision through packaged search, reservation, payment, and other related functions of optimal combinations of public transport and other mobility services for addressing the mobility needs of local residents and of travelers
- \*4 : Short for “Digital Transformation”—a term representing the idea that effective use of IT will transform companies and improve society and people’s lives



Magnified photo of the new rubber-resin polymer alloy



Structural image of rubber-resin polymer alloy  
 \*Rubber phases (islands) are scattered discontinuously throughout the resin phase (sea)