

June 17, 2021

Mitsubishi Chemical Develops Highly Heat-resistant CFRP Using Phenolic Resin

Mitsubishi Chemical Corporation

Mitsubishi Chemical Corporation (MCC; Head office: Chiyoda-ku, Tokyo; President: Masayuki Waga) has announced development of a new carbon fiber reinforced plastic (CFRP) composite material that is lightweight and rigid as well as highly heat-resistant.

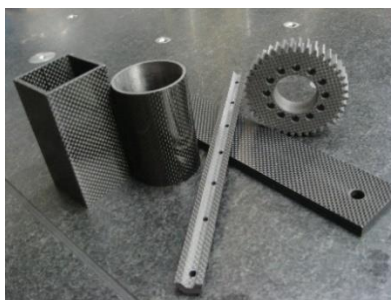
CFRP, known for lightness and rigidity, is increasingly being utilized for mobility applications such as aircraft and automotive lightweighting as well as for industrial machinery applications for efficiency and the advancement of manufacturing processes. However, one of the challenges customers have faced with traditional CFRP that is based on highly versatile epoxy resin is low heat resistance. By using phenolic resin as the base resin, MCC has developed CFRP material that can withstand conditions up to 300°C.

Along with the high thermal conductivity, high rigidity, and lightweight features of CFRP, this highly heat resistant material enables us to provide innovative application solutions to customers that were previously not possible. Some customers have already decided to adopt this new heat-resistant CFRP material, and we are continually identifying additional applications. This latest innovation is one example of our focus on developing new products that meet the diversified and complex needs of our customers.

[Physical characteristics comparison]

	Reinforcement material	Matrix material	Bulk density (g/cm ³)	Heat-resistant temperature (°C)
Our phenolic CFRP	Pitch-based/PAN-based carbon fiber	Phenolic resin	1.7	300 ≦
Our epoxy CFRP	Pitch-based/PAN-based carbon fiber	Epoxy resin	1.7	100 to 200
Aluminum (A6061)			2.7	150
Steel (SS400)			7.9	600

[Usage example]



About Mitsubishi Chemical Corporation

Mitsubishi Chemical Corporation, an operating company of the MCHC Group, is Japan's largest chemical company. The company offers a wide variety of products and solutions in Performance Products and Industrial Materials domains, leveraging its diverse expertise and technology platforms based on chemistry. For more information, visit www.m-chemical.co.jp/en.

Contact

Communication Division

Mitsubishi Chemical Corporation

TEL: +81-3-6748-7161