INNOVATIVE ONE-PART / LOW VISCOSITY MATRIX RESINS FOR COMPOSITES
SHIMTEQ™ RSN ACS01

SHINDO INDUSTRIAL MATERIAL DIVISION

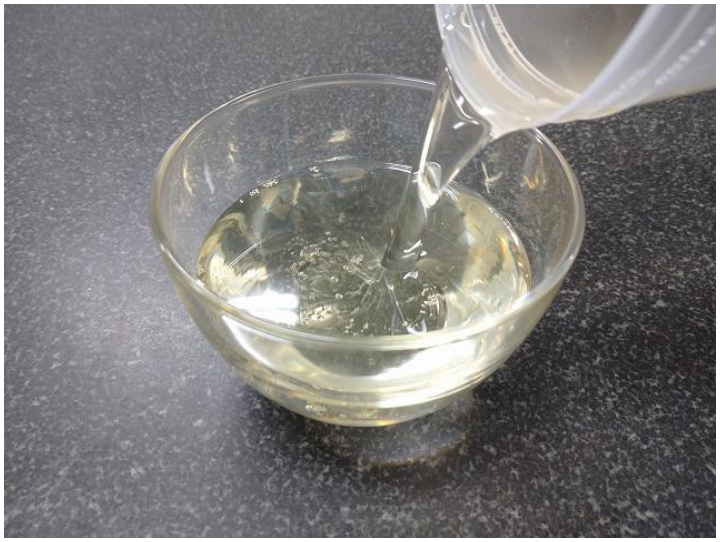

Fig. 1 SHIMTEQ™ RSN ACS01

SHINDO (headquartered in Awara City, Fukui , Japan) has released a new modified acrylic resin, SHIMTEQ™ RSN ACS01, for use as a matrix resins for composites.

SHIMTEQ™ RSN ACS01 is a very low viscosity resin that exhibits 50 mPa-s at 25℃ and can be stored at room temperature. As a one-part curable type, it is a thermosetting resin that undergoes a curing reaction when heated as it is.

Commercially available two-part thermosetting resins such as epoxy resins and unsaturated polyesters are normally used by adding hardening agents and other additives to the main resin before mixing. SHIMTEQ™ RSN ACS01, however, is a

AUTHOR

HIDE Kasakawa
R&D Department Manager

Company Profile
SHINDO's Industrial Materials business is centered on the processing of base materials, including NCF (non-crimp fabrics), carbon/glass fiber reinforced thermoplastic prepregs, heat resistant and three-dimensional knitted fabrics, and other functional base materials.
https://shindo-im.com/en/

For more information about this release
Postal Code 919-0602
60-8-1 Sugano, Awara City, Fukui Prefecture
E-mail: im-company@shindo.com

one-part curable type, eliminating the need for mixing process and allowing storage at room temperature, contributing to simplified material storage management in the manufacturing process and stable quality of cured products.

In addition, the use of low molecular weight liquid monomers and oligomers allows for low viscosity for use in RTM and infusion molding methods. Even when composites with high fiber volume content, which are difficult to impregnate with resin, can be easily impregnated in both the in-plane and out-of-plane directions of the reinforcing fibers.

The cured SHIMTEQ™ RSN ACS01 composite properties showed high toughness while maintaining an elastic modulus equivalent to that of epoxy resins. The high toughness of SHIMTEQ™ RSN ACS01 is that the base resin has a unique molecular design allows the main chain to lengthen through polymerization without cross-linking during curing. As described above, our new resin has both low viscosity and high toughness at a high level, which was difficult to achieve with conventional thermosetting resins such as unsaturated polyester resin, vinylester resin, and epoxy resin. These characteristics expand the possibilities of application to composite molding processes in environments where material temperature control during molding is difficult, and to applications requiring impact resistance, making it possible to provide new solutions.

FIGURES

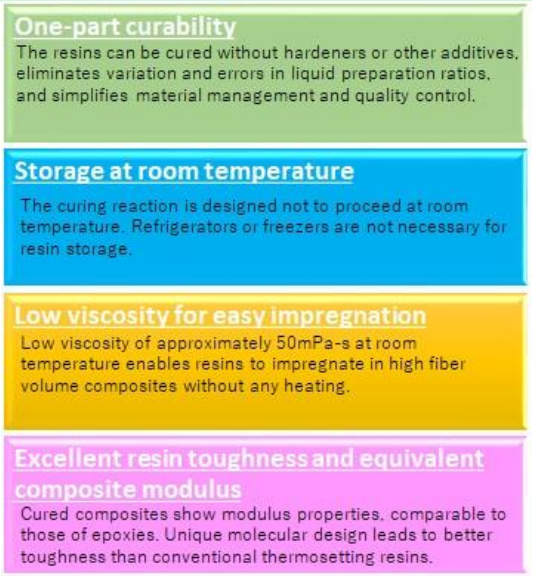

Fig.2 Features of SHIMTEQ™ RSN ACS01