

PARALOID™ TMS-2670

MBS Impact Modifier For Epoxy Resin Applications

Regional Product Availability

- North America
- Europe, Middle East and Africa
- Asia Pacific

Description

PARALOID™ TMS-2670 MBS Impact Modifier is a new Impact Modifier/Toughener, specifically designed to overcome the brittle mechanical behavior of epoxy resins and composites. Over the last few decades, epoxy resins have found use in many industrial and consumer applications. Its versatility in combining chemical and temperature resistance, as well as excellent adhesion and electrical insulation properties, enables a wide variety of uses in adhesive, construction and electrical applications. Unfortunately, epoxy resins tend to display a rather brittle mechanical behavior, which occasionally limits their use. PARALOID™ TMS-2670 MBS Impact Modifier developed by Dow Plastics Additives, specifically overcomes this brittle mechanical behavior. The butadiene based core shell structure has been optimized to achieve an easily dispersible, highly efficient impact modifier.

In addition the optimization of the production process of the PARALOID™ TMS-2670 MBS Impact Modifier has led to a Core-Shell Rubber (CSR) which, once dispersed in the epoxy, has only a minor effect on the viscosity, allowing an improved process ability of the impact modified epoxy resin.

Application Properties

PARALOID™ TMS-2670 MBS Impact Modifier provides an optimal balance of performance benefits in end use epoxy applications.

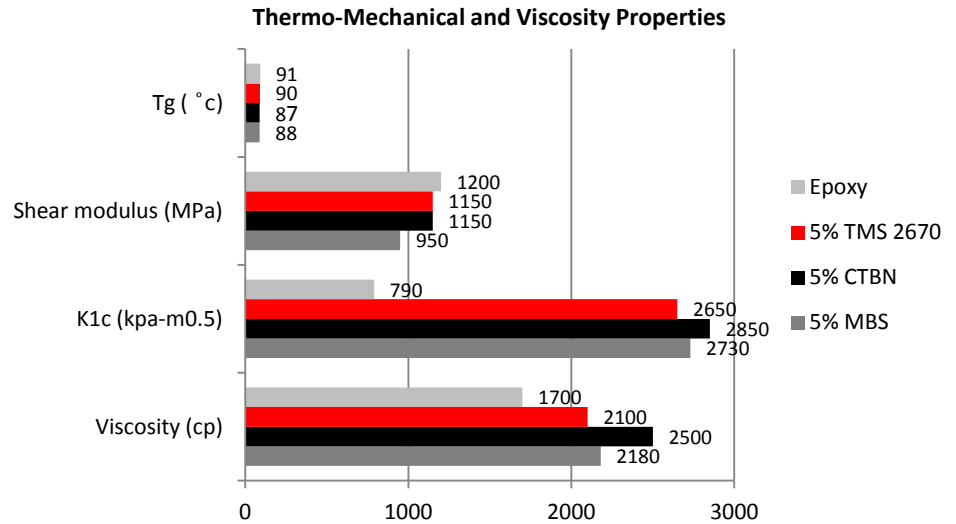
Processing:

- Easy dispersion
- Low viscosity of the modified liquid epoxy resin

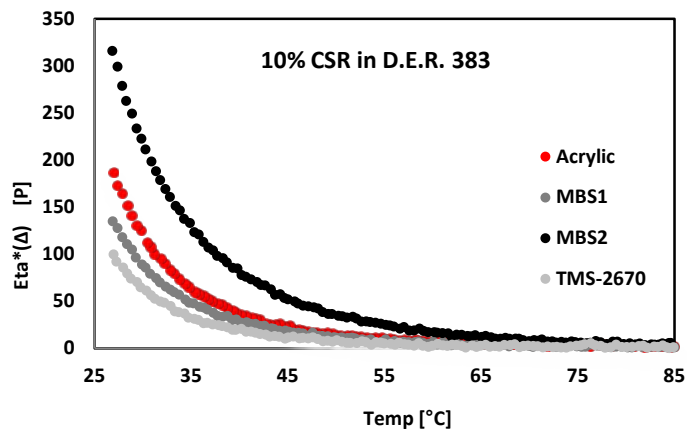
Mechanical/Thermal Properties:

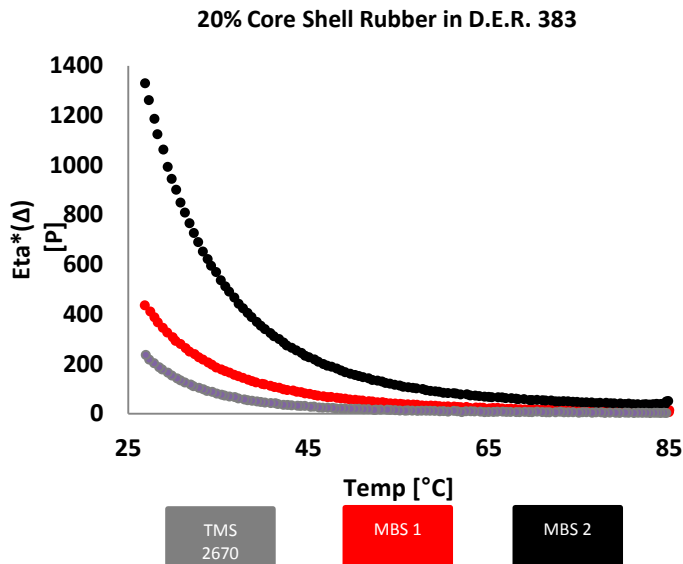
- Enhanced impact performance at room and low temperature
- Enhanced Toughness at room and low temperature
- Retention of glass-transition temperature
- Retention of excellent thermal performance
- Enhanced adhesion properties





PARALOID™ TMS-2670 MBS Impact Modifier is designed to disperse more readily than currently available butadiene based core shell rubber products. PARALOID™ TMS-2670 MBS Impact Modifier also allows for improved process ability of the epoxy resin as it yields only a minor effect on viscosity.





Typical Physical Properties

(These properties are typical but do not constitute specifications.)

Analysis	Unit	Value
Appearance		White Powder
Residual Particles		0.0-30.0
Total Volatiles	Wt. %	<1.0
Residual Chloride	ppm	0-250
Total Organics	ppm	0-500
Resin pH		6.2-7.2
PSD Span		0.0-2.7
Rubber Content	%	76.0-80.0

Compliance

PARALOID™ TMS-2670 MBS Impact Modifier has limited clearance under FDA Food Additive Regulation 21CFR178.3790 governing its use in semi-rigid and rigid vinyl plastics for food packaging and food-contact applications. The maximum allowable amount of modifier depends on the number, quantity and type of modifiers in the formulation.

Storage and Handling

Standard recommended storage conditions are as follows:

- Store indoors, protected from sunlight, UV, and moisture.
- Temperature should not exceed 120 deg. F.
- Opened bags should be kept tightly closed when not in use, preventing absorption of moisture from the air.

When stored correctly in the original packaging, the shelf life of PARALOID™ TMS-2670 MBS Impact Modifier is 2.4 years (900 days) from date of manufacture.



Safe Handling Information

Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material, local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosion, employ bonding and grounding for operations capable of generating static electricity. Dispose of by placing powder in air tight bags. Incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

Material Safety Data Sheets

Material Safety Data Sheets are available outlining hazards and safe handling methods. Contact Dow for copies of the MSDS for this product and for other handling information.

Notes: These are typical properties only and are not to be constructed as specifications. Users should confirm the result by their own tests.

Handling Precautions

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

Medical Applications Policy

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

- Long-term or permanent contact with internal body fluids or tissues. "Long-term" is contact which exceeds 72 continuous hours.
- Use in cardiac prosthetic devices regardless of the length of time involved ("cardiac prosthetic devices" include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass - assisted devices);
- Use as a critical component in medical devices that support or sustain human life; or
- Use specifically by pregnant women in applications designed specifically to promote or interfere with human reproduction.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.**



Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Plastics Additives Technical Representative for more information.

Chemical Registration

Many countries within the Asia-Pacific region require the registration of chemicals, either imported or produced locally, prior to their commercial use. Violation of these regulations may lead to substantial penalties imposed upon the user, the importer or manufacturer, and/or cessation of supply. It is in your interests to ensure that all chemicals used by you are registered. The Dow Chemical Company does not supply unregistered products unless permitted under limited sampling procedures as a precursor to registration.

Note on Asia-Pacific Product Line

Product availability and grades vary throughout the countries in the Asia-Pacific region. Please contact your local Dow representative for further information and samples.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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