



MECHSTER™ 5310FR (Flame Retardant Filled Vinyl Ester Resin)

Mechster™ designates a variety of unsaturated polyester resins synthesized at **Mechemco Industries**. These resins are specially engineered to meet the most diverse needs of fibreglass reinforced plastic moulding industry. Our R & D is geared to tailor **Mechster™ Resins** for the customers' most specific end application. In fact we take pride in suitably formulating the resin to improve your production efficiency as also the field performance of the FRP product.

Mechster™5310FR - is a filled flame retardant Bisphenol A Epoxy Vinyl Ester resin, with unique properties of the chemical resistance coupled with heat resistance and flame retardancy. This makes Mechster™5310FR an ideal material for corrosive environments where flame retardancy is also required.

Mechster™5310FR is designed to have :

- Fast wet out of reinforcements
- Excellent surface finish
- Higher heat deflection temperature
- Good chemical and thermal resistance
- Inbuilt flame retardancy

Physical Properties

| | |
|--------------------------|-----------------------|
| Appearance | : White Opaque Liquid |
| Specific Gravity @25°C | : 1.21 ± 0.02 |
| Viscosity @ 25°C by | |
| 50 RPM, Sp No. 3 | : 400 ± 50 |
| Acid Value mg KOH/g | : 9 ± 2 |
| Volatile Content (w/w) % | : 35 ± 3 |

Curing Behaviour

| | |
|--|-----------|
| Geltime, minutes @ 25°C with 50g Resin | |
| 1.0% v/w P110 ¹ | |
| 1.0% v/w A103 ² | : 15 - 20 |
| 1.5% v/w C109 ³ | |
| Peak Exotherm Temperature°C | : > 130 |

¹ P110: 10% DMA solution in styrene

² A103: Cobalt Octoate Solution in Styrene (3% Cobalt)

³ C109: MEKP (9% A. O.)

Properties of Cured Mechster™5310FR

| Property | Nominal Values | Test Method |
|---------------------------------|----------------|-------------|
| Specific Gravity, @ 25°C | 1.30 | AM-201 |
| Tensile Strength, MPa | 55 | ISO 527-2 |
| Flexural Strength, MPa | 80 | ISO 178 |
| Heat Deflection Temperature, °C | 110 | ISO 75-2 |
| Barcol Hardness | 40 | ASTM D2583 |
| Flammability | Low | IS 6746 |

Uses

Mechster™5310FR is most suitable for making equipment needing corrosion resistance coupled with flame retardancy. It can be used by Hand Lay-up, Spray-up and Filament Winding processes. The applications include corrosive environments, viz., potentially flammable liquids, building panels, flooring compounds, etc.

Packing

Mechster™5310FR is supplied in Open Mouth Tins containing 60kg Net.

Storage

Mechster™ 5310FR resin should be stored in a cool dry place away from sunlight, preferably below 25°C. Under these conditions, the shelf life is well over 3 months.

Handling and Precautions

Mechster™5310FR has a flash point of 34°C and is classified as flammable. Containers should be kept in a cool and ventilated place away from sunlight and sources of ignition. "No Smoking" rules should be strictly enforced. In case of fire, use dry chemical, foam, carbon dioxide or water spray to extinguish the flame. Spillages may be absorbed onto sand or earth and shoveled off and disposed according to local disposal regulations.

Skin contact and vapor inhalation should be avoided during moulding because of the presence of styrene monomer. In case of irritation in the eye or skin, wash with copious amount of water. In extreme case, seek immediate medical advice. The moulding area should be sufficiently ventilated for reducing the vapour levels in the air while compounding and moulding.

The above information and recommendation are based on our extensive experience in the field and is provided only as a general guidance for application of our product. The user should verify the suitability of our product for their own specific applications. We do not warrant or assume any liability for the information provided.