

Mechster™ 5310NFR

(Brominated Epoxy Novalac Based 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™ 5310NFR - a Brominated Epoxy Novalac based Vinyl Ester Resin offers unique properties of the chemical resistance coupled with heat resistance and flame retardancy due to brominated resin with epoxy novalac backbone structure. This makes **Mechster™ 5310NFR** as an ideal material for highly corrosive environments and handling of potentially flammable liquids, building panels etc.

Mechster™ 5310NFR is designed to have :

- Fast wet out of reinforcements
- Excellent surface finish
- Good weatherability
- Higher heat deflection temperature
- Good chemical and thermal resistance
- Inbuilt flame retardancy with / without antimony oxide

Physical Properties

Appearance : Amber color clear viscous liquid

Specific Gravity @25°C : 1.15 ± 0.01

Viscosity @ 25°C by

Brookfield Viscometer, cP : 250 ± 50

Acid Value mg KOH/g : 8 ± 2

Volatile Content (w/w) % : 35 ± 2

Curing Behaviour

Geltime, minutes @ 25°C with

1.0% v/w P 110¹

1.0% v/w A 103²

1.5% v/w C 109³ : 15 - 20

Peak Exotherm Temperature^{OC} : 170

¹ P110: 10% DMA solution in styrene

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

³ C109: MEKP (9% A. O.)

⁴ C109: MEKP (9% A. O.), ⁵ Reinforced with CSM

Properties of Cured Mechster™ 5310NFR

	Cast ⁴	Laminate ⁵
Glass Content % (w/w)	-	30-35
Specific Gravity, @ 25°C	1.22	~1.47
Tensile Strength, MPa	70	120
Tensile Modulus, MPa	3400	6800
Elongation at Break, %	3.0	2.2
Flexural Strength, MPa	130	180
Flexural Modulus, MPa	3500	7500
Heat Deflection Temperature, °C	125	-
Barcol Hardness	40	-
Volume Shrinkage (%)	~6	-
Flammability	Low	Low

(Test methods : IS 6746-1972, ASTM and BS where IS not available.)

Uses

Mechster™ 5310NFR is most suitable for FRP duct work, stacks and stack liner applications, equipment specified to handle potentially flammable liquids and mixture of air and hot gases, building panels, flooring compounds where a degree of flame retardancy is required. Mechster 5310NFR in combination with antimony trioxide (3 - 5%) can improve the flame retardancy rating.

Storage

Mechster 5310NFR 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

Mechster™ 5310NFR 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 shovelled 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 processing.

Our information regarding our products, equipments and processes is based on extensive research and experience in the field of Applied Engineering and is provided as a general guidance in the application of our product. The user should verify the suitability of our product for their end use. We do not warrant or assume any liability for the information provide

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