



Mechster™ 5310CFR

(Flame Retardant Chemical Resistant 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™ 5310CFR - brominated vinyl ester resin, has unique properties of the chemical resistance coupled with heat resistance and best in-built flame retardancy properties available today in a vinyl ester resin. This makes **Mechster™ 5310CFR** as an ideal material for highly corrosive environments where flame retardancy is also of paramount importance.

Mechster™ 5310CFR 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

Mechster™ 5310CFR is an economical fire retardant resin which can be used for equipment handling hot gases and flammable liquids, highly corrosive environments like Sodium Hypochlorite, Chlorine Dioxide and Alkaline Hydrogen Peroxide etc.

Physical Properties

Appearance : Amber color clear viscous liquid

Specific Gravity @25°C : 1.14 ± 0.01

Viscosity @ 25°C by

Brookfield Viscometer, cP : 350 ± 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 P110¹

1.0% v/w A103² : 15 - 20

1.5% v/w C109³

Peak Exotherm Temperature°C : 155 - 160

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™ 5310CFR

	Cast
Specific Gravity, @ 25°C	1.24
Tensile Strength, MPa	85
Tensile Modulus, MPa	3400
Elongation at Break, %	5.0
Flexural Strength, MPa	150
Flexural Modulus, MPa	3500
Heat Deflection Temperature, °C	107
Barcol Hardness	35
Volume Shrinkage (%)	~6
Flammability	Low

(Test methods : IS 6746-1994, ASTM and BS where IS not available.)

Uses

Mechster™ 5310CFR is most suitable for components with high corrosion resistance of vinyl esters, coupled with inbuilt flame retardancy. The applications include very high corrosive environments, viz., flammable liquids, building panels, flooring compounds, etc. **Mechster™ 5310CFR** in combination with antimony trioxide (3 - 5%) has improved fire retardancy rating. The resin can be used for Filament Winding, Hand Layup, Spray-up, Pultrusion, RTM techniques.

Storage

Mechster™ 5310CFR 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™ 5310CFR 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.

NOTE: Mechster™ 5310CFR-M an Antimony Trioxide modified version is available in Two Pack System

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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