

Product Data Sheet

# MECHSTER™ 5310(I)-200

(Epoxy Vinyl Ester Resin for Infusion)

**Mechster™** designates a variety of unsaturated polyester resins synthesized at **Mechemco Resins Pvt. Ltd.** These resins are specially engineered to meet the most diverse needs of fiberglass 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™ 5310(I)-200** - Epoxy vinyl ester resin, is specially designed for processes requiring low viscosities, viz., RTM, VARTM and Infusion. **Mechster™ 5310(I)-200** offers very good resistance to solvents and chemicals, specially to acidic oxidizing environments. This resin has excellent retention in mechanical properties at elevated temperatures

**Mechster™ 5310(I)-200** is designed to have :

- Excellent wetting and adhesion to glass fibres
- Excellent surface finish
- Excellent curing characteristics
- Good weatherability
- Increased fracture toughness
- High heat deflection temperature
- Excellent resistance to solvents and oxidizing environments

Compared to conventionally available vinyl ester resins, **Mechster™ 5310(I)-200** provides easier air release and faster wet out of reinforcement. Moreover, its Controlled curing characteristic allows to build up thicker laminates without excessive exotherm. The laminates built with **Mechster™ 5310(I)-200** are resin rich and light in color, which assists not only in the inspection of during the fabrication or the finished product but also for maintenance during operation / use.

### Physical Properties

Appearance	: Yellow clear viscous liquid
Specific Gravity @25°C	: 1.05 ± 0.01
Viscosity @ 25°C by	
Brookfield Viscometer, cP	: 200 ± 50
Acid Value mg KOH/g	: < 10
Volatile Content (w/w) %	: 40 ± 2

### Curing Behaviour

Geltime, minutes @ 25°C with	
1.0 % v/w P320 <sup>1</sup>	: 60 – 80
1.5 % v/w A101 <sup>2</sup>	
1.5 % v/w C109 <sup>3</sup>	

Peak Exotherm Temperature<sup>OC</sup> : 110 - 130

<sup>1</sup> P320: DMAA Solution in Styrene (20% w/w)

<sup>2</sup> A101: Cobalt Octoate Solution in Styrene (1% Cobalt)

<sup>3</sup> C109: Methyl Ethyl Ketone Peroxide (9% Active Oxygen)

### Typical Properties of Cured Mechster™ 5310(I)-200

Property	Value
Specific Gravity, @ 25°C	1.13
Tensile Strength, MPa	75
Tensile Modulus, MPa	3600
Elongation at Break, %	5
Flexural Strength, MPa	140
Flexural Modulus, MPa	3500
Heat Deflection Temperature, °C	105
Barcol Hardness	40

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

### Uses

**Mechster™ 5310(I)-200** is suitable for all types of processing techniques, viz., Hand Lay-up, Spray-up, Filament Winding, Compression Molding, RTM, Pultrusion as well as Vacuum Infusion Process. The equipment/components made with **Mechster™ 5310(I)-200** exhibit superior performance with the dynamic stresses, including cyclic temperature changes.

### Packing

**Mechster™ 5310(I)-200** is supplied in non returnable M. S. drums containing 200 kg net.

### Storage

**Mechster™ 5310(I)-200** should be stored in a cool and dry place away from sunlight, preferably below 25°C. Under these conditions, the shelf life is 4 months. The storage stability could be further improved by aerating the resin stored in barrels at an interval of about a fortnight.

### Handling and Precautions

**Mechster™ 5310(I)-200** 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 on to 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 molding.

*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.*

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