

MECHSTER™ 5310(N)-300

(Epoxy Novolac 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™ 5310(N)-300 - Epoxy Novolac based vinyl ester resin, is designed to provide good mechanical properties at high temperatures. **Mechster™ 5310(N)-300** 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(N)-300 is designed to have :

- Light Color and extended shelf life
- Ease in processing – eliminating need of promoter
- Excellent wetting and adhesion to glass fibres
- Excellent surface finish
- Good weatherability
- Increased fracture toughness
- High heat deflection temperature
- Lower Styrene Emissions
- Excellent resistance to solvents and oxidizing environments

Compared to conventionally available vinyl ester resins, **Mechster™ 5310(N)-300** 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(N)-300** 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 : Pale Yellow clear viscous liquid

Specific Gravity @25°C : 1.07 ± 0.01

Viscosity @ 25°C by

Brookfield Viscometer, cps : 300 ± 50

Acid Value mg KOH/g : 8 ± 2

Volatile Content (w/w) % : 33 ± 2

Curing Behaviour

Geltime, minutes @ 30°C with

0.5 % v/w A101¹ : 20 - 25

1.5 % v/w C109²

Peak Exotherm Temperature^oC : 190

¹ A101: Cobalt Octoate Solution in Styrene (1% Cobalt)

² C109: MEKP (9% A. O.)

Typical Properties of Cured Mechster™ 5310N-300

	Unfilled Cast
Specific Gravity, @ 25°C	1.16
Tensile Strength, MPa	84
Tensile Modulus, MPa	3550
Elongation at Break, %	3 to 4
Flexural Strength, MPa	130
Flexural Modulus, MPa	3750
Heat Deflection Temperature, °C	150
Barcol Hardness	40
Volume Shrinkage (%)	~8

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

Uses

Mechster™ 5310(N)-300 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(N)-300** exhibit superior performance with the dynamic stresses, including cyclic temperature changes. Typical applications include high temperature chlorination or caustic scrubbing, fuel storage tanks, industrial waste treatment and solvent extraction processes.

Storage

Mechster™ 5310(N)-300 should be stored in a cool and dry place away from sunlight, preferably below 25°C. Under these conditions, the shelf life is 3 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(N)-300 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 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 provided