

**MECHSTER™ 5310HXG(T)**  
(High HDT Vinyl Ester Tooling Gelcoat)

**Mechster™** designates a variety of unsaturated polyester and vinyl ester resins manufactured by **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™ 5310HXG(T)** is a tooling gelcoat based on a specially modified version of high HDT Vinyl Ester Resin. The tool surface gets a uniform surface with this gel coat. This gel coat can be easily mixed with suitable color pastes for desired color.

**Mechster™ 5310HXG(T)** is designed to have :

- Excellent surface finish
- Excellent toughness coupled with very good abrasion and scratch resistance
- Excellent adhesion with the backup FRP
- Easier vertical surface applications with minimum sagging

Moulds/Tools made from **Mechster™ 5310HXG(T)** exhibit excellent surface finish which is smooth. The gelcoated surface has very good toughness and abrasion resistance coupled with high heat deflection temperature. The gelcoat is designed to prevent star crack formation and blistering on the mould surface. The tools prepared with this gelcoat exhibit reduce post production repairs and have long service life.

**Liquid Gelcoat properties**

Property	Nominal Values	Test Method*
Appearance	Highly Viscous Opaque Liquid	AM-113
Specific Gravity @25°C	1.20 ± 0.02	AM-103
Viscosity <sup>1</sup> @ 25°C, cP	4500 ± 750	AM-101
Acid Value, mg KOH/g	8 ± 3	AM-102
Volatile Content, (w/w) %	35 ± 3	AM-106

**Curing Characteristics**

Standard Gel Time Test<sup>2</sup> @ 30°C

Property	Nominal Values	Test Method*
Gel Time, minutes	35 ± 5	AM-110
Peak Exotherm Temperature, °C	100 ± 10	AM-110

**Notes:**

\* Internal Test Method, available on request

1: By Brookfield Viscometer, Sp. No. 4, @ 50 rpm

2: Determined using 1.0 % v/w P110 + 1.0 % v/w A101 + 2.0% v/w C109

3: Cast is prepared by Catalysing base resin for tooling gelcoat with 1.0 % v/w P110 + 1.0 % v/w A101 + 2.0% v/w C109 and curing at room temperature for 24 hours followed by post curing for 6 hours at 80°C + 2 hours at 100°C + 1 hour @ 120°C P110:10% Dimethyl Aniline solution in Styrene

A101: Cobalt Octoate solution (containing 1% Cobalt)

C109: Methyl Ethyl Ketone Peroxide (containing 9% Active Oxygen)

**Properties of unfilled Cast<sup>3</sup> of Base Resin**

Property	Nominal Values	Test Method*
Relative Density @ 25 °C	1.25	AM-201
Tensile Strength, MPa	70	ISO 527-2
Tensile Modulus, MPa	3400	ISO 527-2
Elongation at Break, %	3.5	ISO 527-2
Flexural Strength, MPa	135	ISO 178
Flexural Modulus, MPa	3200	ISO 178
Heat Deflection Temp., °C	120	ISO 75-2
Barcol Hardness	40	ASTM 2583

**Uses**

**Mechster™ 5310HXG(T)** is a suitable tooling gelcoat for all types of moulds to be used for Contact Moulding (by Hand-layup, Spray-up) and RTM applications. The material is best suitable for precision mould production. This tooling gelcoat need to be backed up with Vinyl Ester Tooling Resin, viz., **Mechster™ 5310HX(T)** for best results.

**Packing**

**Mechster™ 5310HXG(T)** is supplied in non returnable Open Top M.S. drums containing 25 kg & 50 kg net.

**Storage and Handling**

**Mechster™ 5310HXG(T)** should be stored in a cool and dry place away from sunlight, preferably below 25°C. Under these conditions, the shelf life is 2 months. Material must be stirred well before use.

**Mechster™ 5310HXG(T)** has a flash point of 32°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 compounding and moulding.

**Caution**

Store catalyst and accelerator separately. Do not allow them to come in contact with each other as they form an explosive mixture. Carry out separate addition of accelerator and catalyst to the resin mix for avoiding accidents.

**Prepigmented version in Black Color is available on request**

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.