

## **CHEMIFIX ISO** Isophthalic Polyester Resin

**Chemifix ISO** (Isophthalic Polyester Resin) is the brand name for unsaturated polyester resins manufactured at **Chemisight Resin Technologies**. These resins are specially designed to cater almost entire spectrum of glass reinforced plastic moulding industry. **Chemifix ISO** are formulated to have increased production efficiency and improved field performance of finished product.

**Chemifix ISO** is a medium reactivity, high molecular weight, Isophthalic acid based unsaturated polyester resin specially designed for improved chemical resistance and extremely good mechanical properties over conventional isophthalate resins.

**Chemifix ISO** provides fast wetout of reinforcements, rapid and tack-free surface cure, high heat deflection temperature and superior chemical resistance, particularly to most mineral and organic acids, oil, etc.

Fiberglass reinforced **Chemifix ISO** laminates exhibit excellent hydrolytic stability and resistance to outdoor weathering. The improved wet-strength even at elevated temperature and excellent chemical resistance to most acids at dilute to medium concentrations are some of the important characteristics.

### Properties of **Chemifix ISO**

- Appearance : Clear pale yellow to pale amber liquid
- Specific Gravity @ 25°C : 1.10 ± 0.01
- Viscosity @ 25°C  
Brookfield Viscometer, cP : 600 ± 50
- Acid Value, mg KOH/g : 15 ± 3
- Volatile Content, (w/w)% : 40 ± 2
- Gel time, minutes @ 25°C with  
1.5% Accelerator : 15 - 20  
1.5% Catalyst
- Peak Exotherm Temperature, °C : 175 - 180



## Fiber reinforced polyester Composites VS other material of construction A Comparison:

Mechanical Properties of Pultruded Profiles Vs. Other Structural Materials

Properties	Pultruded FRP	Regid PVC	Mild Steel	Stainless Steel	Wood
Tensile Strength (N/mm <sup>2</sup> )	382	44	340	340	80
Flexural Strength (N/mm <sup>2</sup> )	468.3	70	380	380	12
Flexural Modulus (N/mm <sup>2</sup> )	22489	2400	196000	196000	700
Izod Impact (Kg.m/cm)	2.15	0.09	1.5	0.53	-

The cast and glass reinforced laminates were prepared from **Chemifix ISO** Catalysed with 1.0% accelerator and 1.5% catalyst. The specimens were first allowed to cured at room temperature for 24 hours and subsequently post-cured at 80°C for 6 hours.

The mechanical properties of the glass reinforced **Chemifix ISO** laminates can be greatly improved by ensuring complete wetout and incorporation of directional reinforcements like rovings, woven rovings, glass cloth etc.

**Uses:** **Chemifix ISO** is most suitable for moulding of high performance FRP articles such as,

- Chemical resistant process equipments, storage tanks, pipes, ducts, hoods, etc.
- Fume handling systems
- Outdoor equipments where weathering is of paramount importance
- Pollution control equipments
- Water-sports such as FRP flums for slides, paddle boats etc.
- Mould making
- Flap Gates

**Chemifix ISO** is also suitable for anticorrosive / chemical resistant lining, etc.

**Packing:** **Chemifix ISO** is supplied in non-returnable M. S. drums containing 220 kgs. net and HDPE carboys containing 35 kg. net.

**Storage & Handling:** **Chemifix ISO** has a flash point 34°C and classified as flammable. Containers should be kept in a cool, dry and ventilated place away from sunlight and sources of ignition. Under these conditions, the shelf life is 3 months. The storage stability could be further improved by aerating the resin stored in an interval of about a fortnight.

"No Smoking" rules should be strictly enforced. In case of fire, suitable extinguishers are dry chemical, foam, carbon dioxide or water spray. Containers closed to a fire should be kept cool by spraying with water.

Spillage may be absorbed onto sand or earth and shovelled off for disposal according to local regulations.

**Caution:** Store accelerator and catalyst separated. Do not allow them to come in contact with each other as they form violently explosive mixture. It is recommended that the accelerator be blended into the resin first and catalyst be added immediately before use.

**Physiological & Toxicological behaviour of Chemifix ISO:** The moulding area should be sufficiently ventilated for reducing the styrene vapour levels in the air while moulding.

Skin contact and vapour inhalation must be avoided during moulding because of the presence of styrene monomer. In case of irritation in the eye or skin, it is recommended to wash with copious amount of water. In extreme case, seek immediate medical advice.



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