

# **TECHNICAL DATA SHEET**

UNSATURATED TEREPHTHALIC POLYESTER RESIN

LRPOL022-T

#### **General Description:**

Page | 1

**LRPOL022-T** is an Unsaturated Polyester Resin based Terephthalic Acid and standard Glycols, dissolved in and cross linked with Styrene having capability to be used as casting laminating resin for General Purpose items.

- Medium reactivity.
- Good Mechanical performance combining a good elongation at break in tension.
- Good chemical properties.

# **Applications and Uses:**

Isophthalic polyester resin is used in the following manufacturing process:

- Manufacturing of Tanks, Decorative items.
- suitable for Filament winding process

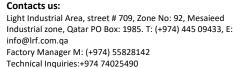
# **Moulding Information:**

- Hand lay up
- Spray up
- Filament Winding

# Typical Properties for LRPOL022-T:

| Table 1: Specification of Liquid Resin |   |               |          |                       |  |  |  |  |
|--|---|---------------|----------|-----------------------|--|--|--|--|
| No.                                    | Property                                  | Test Method   | Unit     | Value                 |  |  |  |  |
| 1                                      | Viscosity at 25°C<br>(LV2, Rpm 30, 60sec) | ISO 2555:2018 | mPa.s    | 300-50 <mark>0</mark> |  |  |  |  |
| 2                                      | Density at 23°C                           | ISO 1675:2022 | g/mL     | 1.1-1.16              |  |  |  |  |
| 3                                      | Acid Value                                | ISO 2114:2000 | mg KOH/g | 15-25                 |  |  |  |  |
| 4                                      | Non-volatile-matter content               | ISO 3251:2019 | %        | Min 55%               |  |  |  |  |
| 5                                      | Gel Time @ 25°C                           | ASTM D2471-99 | Minutes  | 10-20                 |  |  |  |  |
| 6                                      | Gel to Peak Time                          | ISO 2535:2001 | Minutes  | 8-16                  |  |  |  |  |
| 7                                      | Peak Exothermic Temperature               |               | °C       | 160-195               |  |  |  |  |

Note : Properties can be adjusted based on the customer's requirements.





LRF-QAC-FM-016, Rev 00, Dated 27th Dec 2023



# 

|     | Table 2: Specification of Cured Resin       |                                   |      |          |  |  |  |  |
|-----|---|-----------------------------------|------|----------|--|--|--|--|
| No. | Property                                    | Test Method                       | Unit | Value    |  |  |  |  |
| 1   | Tensile Strength                            | ISO 527-1:2019<br>ISO 527-2: 2012 | МРа  | Min 70   |  |  |  |  |
| 2   | Tensile Modulus                             |                                   | MPa  | Min 3500 |  |  |  |  |
| 3   | Elongation at break                         |                                   | %    | Min 3    |  |  |  |  |
| 4   | Flexural Strength                           | ISO 178:2019                      | MPa  | Min 120  |  |  |  |  |
| 5   | Flexural Modulus                            |                                   | MPa  | Min 3500 |  |  |  |  |
| 6   | Barcol Hardness                             | ASTM D 2583-13a (934-1)           | -    | Min 40   |  |  |  |  |
| 7   | Heat Deflection Temperature †<br>(1.80 MPa) | ISO 75-1:2020<br>ISO 75-2:2013    | °C   | Min 85   |  |  |  |  |

#### Note :Properties can be adjusted based on the customer's requirements.

#### Shelf life and Storage:

To ensure maximum stability and maintain resin properties within the desirable range, UPR should be stored in closed containers at temperatures below 25 °C, and away from heat sources such as, but not limited to, direct sunlight, steam pipes or furnaces. Under proper storage conditions the minimum shelf-life performance is estimated at six months, provided that the product is stored in the original, unopened container. Shelf life decreases with increasing storage temperature, or when it is kept near a heat source or direct sunlight.

#### **Typical Curing Characteristics and Recommendations**

| Resin (g) | Accelerator                       | Catalyst               | •     | Gel Time<br>minutes | Peak<br>Exothermic |
|-----------|-----------------------------------|------------------------|-------|---------------------|--------------------|
| 100g      | Cobalt octoate 6% :- 0.15% -0.30% | Butanox M50/60 1% - 2% | 25 °C | 10-20               | 170°C - 210°C      |
| 100g      | Cobalt octoate 1% :- 1% - 2%      | Butanox M50/60 1% - 2% | 25°C  | 10-20               | 170°C - 210°C      |

#### Note :Properties can be adjusted based on the customer's requirements.

**LRPOL022-T** should be processed at room temperature (18-25°C). Lower temperature have an adverse effect om proper curing . Especially when stored in the presence of air ,there may be an increase in the gel time ,although this can be compensated by increasing the amount of curing agent.

#### **Standard Packaging:**

The standard packaging available are standard intermediate bulk containers (IBC), 220 kg stainless steel drums and trailer tanks. However, UIPR can be packaged in different quantities. as per the request of the customer. **Dot Label Required: Flammable Liquid** 

#### **Precaution for handling:**

Laffan Resin Production Factory (LRPF) maintains and regularly updates the Material Safety Data Sheet (MSDS) of all its products. All supervisory personnel and employees expected to be working with the resin must be provided with the MSDS. Due attention should be given to the precautions for handling chemicals provided in the MSDS prior to any use of this product.

Contacts us: Light Industrial Area, street # 709, Zone No: 92, Mesaieed Industrial zone, Qatar PO Box: 1985. T: (+974) 445 09433, E: info@lrf.com.qa Factory Manager M: (+974) 55828142 Technical Inquiries:+974 74025490

