# PRODUCT TECHNICAL DATA SHEET

## *ES-1070*
***Casting Type Polyester***

## DESCRIPTION AND BASIC PROPERTIES

ES-1070 is a terephthalic acid based, unsaturated polyester resin that is used for casting. It is elastic with a medium reactivity. The most common usage is the production of marbles by adding up filling materials in the proportion of 70-80%. Furthermore, it can be safely used in the production of cuvettes, sinks, kitchen counters, table edges-legs, buttons, ornaments etc.

| APPLICATION METHODS | CHEMICAL STRUCTURE |
|---|---|
| Hand lay-up<br>Casting | **Acid:** Terephtalic<br>**Acceleration:** No<br>**Reactivity:** Medium<br>**Modification:** MMAK |

## MECHANICAL PROPERTIES OF CURED RESIN

| | UNIT | VALUE[1] | METHOD |
|---|---|---|---|
| **Tensile Strength** | MPa | 65 ± 6 | ASTM D638 |
| **Tensile E-Modulus** | GPa | 3.3 ± 0.4 | ASTM D638 |
| **Elongation At Break** | % | 7.0 ± 0.7 | ASTM D638 |
| **Flexural Strength** | MPa | 120 ± 10 | ASTM D790 |
| **Flexural E-Modulus** | GPa | 2.8 ± 0.3 | ASTM D790 |
| **Heat Deflection Temperature (HDT)[2]** | °C | 70 ± 5 | ISO 75 A |
| **Barcol Hardness** | Barcol | 45 ± 5 | ASTM D2583 |
| **Impact Strength** | $Kj/m^2$ | 11 ± 2 | ISO 180 |

*[1]For fully cured resin, curing Schedule- 24 hrs at 20°C, 4 hrs at 90°C*
*[2]Curing Schedule- 24 hrs at 20°C, 4 hrs at 90°C, 3 hrs at 120°C*

## PROPERTIES OF LIQUID FORM

| | UNIT | VALUE | METHOD |
|---|---|---|---|
| **Appearance** | - | Transparent | - |
| **Viscosity[1]** | cp | 350 ± 50 | ISO 2555 |
| **Monomer Content** | % | 40 ± 2 | ISO 3251 |
| **Density** | $g/cm^3$ | 1.12±0.02 | ISO 1675 |
| **Acid Number** | mg KOH/g | 25 ± 3 | ISO 2114 |
| **Gel Time[2] (60°C-80°C)** | min | 5 ± 1 | ISO 584 |
| **Cure time[2] (40°C-Max.°C)** | min | 10 ± 2 | ISO 584 |
| **Peak Exotherm[2]** | °C | 175 ± 10 | ISO 584 |
| **Shelf Life** | month | 6 | - |

*[1]Brookfield DV II, 23°C, 3 spd, 10 rpm*
*[2]25°C, 1 g Cobalt Octoate(1%) and 2 ml MEK-P(Butanox M60) for 100 g sample*

## STORAGE CONDITIONS

It should be stored in a dry, clean and cool place (15-25 ° C) in closed packages. The shelf life of the product is valid for this temperature range and it should not be forgotten that it will shorten at high temperatures. Products with the same charge number and date must be stored together.

Another factor that affects the life of unsaturated polyester resins containing styrene is sunlight. Styrene must be polymerized in the sunlight and products that are considered to shorten the life of the product should be avoided from direct sunlight contact.

## MORE INFORMATION

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