

Description and Basic Properties

ES-1043 an orthophthalic based, methyl methacrylate modified unsaturated polyester resin. Low-middle reactivity, high viscosity and flexible. It is used as engineering stone application also can be used as a general purpose casting polyester. It has light colour and extremely shiny products. Its resistance to exterior conditions is high. Due to its low volumetric shrinkage, it has no deformation in end product.

Application Methods	Chemical Structure
Hand lay-up	Acid : Ortophtalic Acceleration : No Reactivity : Low-middle Modification : MMAK

Properties of Liquid Form

	Unit	Value	Method
Appearance	-	Transparent	-
Viscosity¹	cp	550 ± 50	ISO 2555
Monomer Content	%	36 ± 2	ISO 3251
Density	g/cm ³	1.14 ± 0.02	ISO 1675
Acid Number	mg KOH/g	30 ± 3	ISO 2114
Gel Time² (60 °C - 80 °C)	min	2'00" ± 4'00"	ISO 584
Cure Time² (40 °C - Max °C)	min	7' ± 9'	ISO 584
Peak Exotherm²	° C	200 ± 10	ISO 584
Shelf Life	month	6	-

¹Brookfield DV II, 25° C, 3 spd 10 rpm

²80° C, 0,2 g Cobalt Octoate (6%) and 2 g TBPB for 100 g sample

Mechanical Properties of Cured Resin

	Unit	Value ¹	Method
Tensile Strength	MPa	60 ± 5	ASTM D638
Tensile E-Modulus	GPa	4.0 ± 0.4	ASTM D638
Elongation at Break	%	3.0 ± 0.3	ASTM D638
Flexual Strength	MPa	110 ± 10	ASTM D790
Flexual E-Modulus	GPa	3.5 ± 0.4	ASTM D790
Heat Deflection Temperature (HDT)²	° C	52 ± 3	ISO 75 A
Barcol Hardness	Barcol	45 ± 5	ASTM D2583
Impact Strenght	Kj/m ²	10 ± 2	ISO 180

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

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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