

## Description and Basic Properties

ESVIN-1020 is a Bisphenol A- Epoxy based vinyl ester resin that is medium-reactive. It is used in the production of equipments that requires high mechanical strength. As well, it is advantageous with respect to unsaturated polyester resin in the situation of being resistant to high corrosion even in high temperatures. It can be applied by the methods of foremost hand lay-up, fiber spraying, cold press, pultrusion and also the methods of RTM and casting.

Application Methods	Chemical Structure
Hand lay-up Fiber Spraying Cold Press Pultrusion RTM Casting	Acid : Bisphenol A-Epoxy Acceleration : No Reactivity : Medium

## Properties of Liquid Form

	Unit	Value	Method
<b>Appearance</b>	-	Clear, yellowish	-
<b>Viscosity<sup>1</sup></b>	min	550 ± 50	ISO 2555
<b>Monomer Content</b>	%	40 ± 3	ISO 3251
<b>Density</b>	g/cm <sup>3</sup>	1.06 ± 0.02	ISO 1675
<b>Acid Number</b>	Mg KOH/g	17 ± 3	ISO 2114
<b>Gel Time<sup>2</sup></b>	min	30 ± 10	ISO 2535
<b>Shelf Life</b>	month	6	-
<sup>1</sup> Brookfield DV II, 25° C, 3 spd, 10 rpm <sup>2</sup> 25° C, 0.2 ml Cobalt Octoate (6%) and 2 ml MEK-P (Butanox M60)			

All the information provided in this data sheet is believed to be true and accurate but no guarantee and warranty is provided for mechanical & liquid composition. ESKIM A.S. does not take responsibility for any inadequacies that may occur due to improper storage, handling and / or application.

## Mechanical Properties of Cured Resin

	Unit	Value <sup>1</sup>	Method
<b>Tensile Strength</b>	MPa	65 ± 5	ASTM D638
<b>Tensile E-Modulus</b>	GPa	3.6 ± 0.4	ASTM D638
<b>Strain at Fracture</b>	%	5.4 ± 0.2	ASTM D638
<b>Elongation at Break</b>	%	4.2 ± 0.3	ASTM D638
<b>Flexual Strenght</b>	MPa	140 ± 10	ASTM D790
<b>Flexual E-Modulus</b>	GPa	3.6 ± 0.3	ASTM D790
<b>Heat Deflection Temperature (HDT)<sup>2</sup></b>	° C	120 ± 5	ISO 75 A
<b>Impact Strenght</b>	Kj/m <sup>2</sup>	21 ± 2	ISO 180

<sup>1</sup>For fully cured resin, curing Schedule – 24 hrs at 20° C, 4 hrs at 90° C

<sup>2</sup>Curing Schedule – 24 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

ESKİM KİMYA

75.Yıl Osb Mahallesi 6. Cad. No:2 26110 ESKİŞEHİR

TEL:0(222) 236 01 90 (PBX)

FAKS: 0(222) 236 01 87

<http://www.eskim.com.tr/>

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