

Atlac® 590Z

Novolac epoxy vinyl ester resin for corrosive environments

Atlac® 590Z provides excellent thermal and chemical resistance against solvents, acids and oxidizing media like chlorine. The resin offers high retention of strength at elevated temperatures.

Benefits

- High mechanical strength
- Resisting elevated temperatures
- Resistance to strong oxidizing medium corrosion

Application

Atlac® 590Z is a styrene solution of phenolic modified vinyl resin with moderate reactivity and viscosity. Atlac® 590Z offers excellent high temperature stability and corrosion resistance to organic solvents, acids and oxidizing media such as chlorine, as well as high temperature strength retention. Atlac® 590Z is suitable for most production processes, especially for filament winding, centrifugal casting, hand lay-up and spray-up. It can also be used to prepare glass flake coating and cement paste.

Approvals

Cured non-reinforced Atlac® 590Z resin is classified as DIN 16946/2 type 1310, DIN 18820/1 group 5 and European EN12131/2 group 8.

Product Specification

Property	Value	Unit	TM
Appearance	Clear	-	TM_2265
Solids content, IR drying	64-68	%	TM_2033
Viscosity @23°C	400-550	mPa.s	TM_2013
Gel_Time (25 until 35 °C)	12-25	min	TM_2625

Remarks

Reactivity measurement: 100 g resin with 1g Butanox M50 (Nouryon) and 1g NL-49P (Nouryon, 1% Co content).

Liquid resin typical properties

Property	Value	Unit	TM
Flash point	33	°C	TM 2800
Stability, no initiator, dark, 25 °C	6	Month	-

Unfilled castings typical properties

Property	Value	Unit	TM
Tensile strength	77	MPa	ISO 527-2
Tensile modulus	3.6	GPa	ISO 527-2
Tensile elongation	2.7	%	ISO 527-2
Flexural strength	148	MPa	ISO 178
Flexural modulus	3.7	GPa	ISO 178
HDT	144	°C	ISO 75 Ae
Tg	166	°C	ASTM D570
Unnotched impact strength	13	kJ/m ²	ISO 179

Fiberglass reinforced resin typical properties

Property	Value	Unit	TM
Glass fibre content	34	%	ASTM D2584
Tensile strength	110	MPa	ISO 527-2
Tensile modulus	10.1	GPa	ISO 527-2
Flexural strength	208	MPa	ISO 178
Flexural modulus	9.8	GPa	ISO 178
Unnotched impact strength	115	KJ/m ²	ISO 179
Coefficient of linear expansion	30×10 ⁻⁶	°C ⁻¹	ASTM D696
Heat conductivity	0.19	W/m.k	DIN 52612

Curing conditions

1.0g M50 (Nouryon) and 0.5g NL-49P (Nouryon, 1%Co) were added to 100 g of resin. After 24h at RT followed by post curing for 3h at 100°C and 1h at 150°C.

Storage Guidelines

The resin should be stored in a dark and dry place at temperatures between 5 °C and 30 °C. Shelf life is reduced when resin is stored at higher temperatures and the properties of the resin might change during storage. The shelf life of styrene containing Vinyl ester will be significantly reduced when exposed to light. Therefore, store in dark and in 100% light tight containers only. Exposure to direct sunlight should be avoided.

Material Safety

A Material Safety Data Sheet of this product is available on request.

Test Methods

Test methods (TM) referred to in the table(s) are available on request.

Processing Guidelines

A. Atlac® 590Z normally exhibits tack-free cure. To ensure that surfaces in contact with air do not become sticky, appropriate additives (such as waxes) can be added to the resin. To achieve the optimal physical and chemical properties, the product can be post cured through several hours of high temperature (120 ~ 150°C).

B. Post-curing are strongly recommended for ideal chemical corrosion resistance. Cyclohexanone peroxide or CuH/ cobalt liquid curing systems are recommended. When under 15°C, (0.1~0.5)%10%DMA (dimethylaniline) styrene solution should be added to improve curing efficiency.

C. Before the resin is used, it should be stored in a suitable temperature-humidity environment for a constant period of time. When MEKP/Co curing system is adopted, the operating temperature should be above 15°C.

Brochures

You can find additional information through the Atlac® Product Guide. For detailed information on the chemical resistance of Atlac® resins, please consult our Chemical Resistance Guide. Both brochures are available for download from the AOC web site: aocresins.com

ISO 9001:2015 Certified

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About AOC

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AOC. Trusted Solutions

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