

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.

With Atlac® 590Z resin you can make strong and durable parts with excellent heat resistance.

Benefits

- Continued process operation
- Resisting elevated temperatures
- Low maintenance and low cost of ownership
- Freedom of design, showing great through cure in thick laminates
- Track record of performance in tough environments

Major Applications

Atlac® 590Z is suitable for most commercial composites fabrication processes such as filament winding, centrifugal casting, hand lay-up, spray-up, pultrusion, etc. It can also be used for producing glass flake coating and mortar.

The resin can be used for a wide variety of applications in industrial environments, including chemical process equipment, exhausts and chimneys, and gas piping.

When using CHP, the low peak exotherm results in great through cure allowing to make thick laminates in one go.

Certifications and Approvals

Cured non-reinforced Atlac® 590Z conforms to type 1310 according to DIN 16946/2 and is classified group 5 according to DIN 18820/1 and group 8 according to EN12131/2.

Product Specifications

Property	Value	Unit	TM
Appearance	Clear		TM 2265
Solids content	65 - 71	%	TM 2033
Viscosity 23 °C, 100 s ⁻¹	450 - 550	mPa.s	TM 2013
Acid value	6 - 12	mg KOH/g	TM 2401
Gel time 25 until 35 °C	12 - 25	min	TM 2625
Peak time	17 - 35	min	TM 2625
Peak temperature	140 - 180	°C	TM 2625

Viscosity: Physica Z2/100s⁻¹/23°C.

Reactivity at 25°C: 1.0g Cobalt accelerator (1%) and 1.0 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g resin.

Liquid resin typical properties

Property	Value	Unit	TM
Density 23 °C	1090	kg/m ³	TM 2160
Flash point	33	°C	TM 2800
Stability (no initiator, dark, 25°C)	6	month	

Unfilled castings typical properties

Property	Value	Unit	TM
Tensile strength	89	MPa	ISO 527-2
Tensile modulus	3.6	GPa	ISO 527-2
Elongation at break	3.7	%	ISO 527-2
Flexural strength	147	MPa	ISO 178
Flexural E-Modulus	3.7	GPa	ISO 178
Outer fiber strain	4.8	%	ISO 178
HDT	155	°C	ASTM D648
Impact strength	13	kJ/m ²	ISO 179
Tg	165	°C	DIN 53445

The mechanical properties were determined using 0,5 g Cobalt accelerator (1%) and 1,0 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g resin. Samples were cured for 24 h at room temperature, followed by 2 h at 155°C. HDT samples were post cured for 24 hours at 200°C.

Cured reinforced resin typical properties

Property	Value	Unit	TM
Glass 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
Thermal conductivity	0.19	W/m.K	DIN 52612
Impact strength	115	kJ/m ²	ISO 179

The mechanical properties were determined using 0,5 g Cobalt accelerator (1%) and 1,0 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g resin. Samples were cured for 24 h at room temperature, 3 h at 100°C and 1 h at 150°C.

Application Guidelines

Atlac® 590Z exhibits nearly tack-free cure however the surface may not be cured completely. To ensure tack-free curing of surfaces exposed to air, suitable additives (e.g. paraffin solution) should be added. The final state of cure may further be optimized by post curing at elevated temperatures (e.g. 80 or 100 °C) for several hours.

Post curing is especially recommended if parts made from Atlac® 590Z are intended for contact with chemicals or high temperatures.

Before use, the resin should be conditioned at a well-defined application dependent temperature (usually 15 °C minimum for a MEKP/ Cobalt cure).

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 (www.aocresins.com).

Storage Guidelines

The resin should be stored indoors in a dry place at temperatures between 5°C and 30°C, in the original, unopened, 100% light-tight and undamaged packaging.

The properties of the resin may change slightly during storage. Shelf life is shorter at higher temperatures.

Material Safety

A Safety Data Sheet (SDS) of this product is available on request.

Test Methods

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

ISO 9001:2015 Certified

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2015 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

AOC. Trusted Solutions

AOC is the leading global supplier of resins and specialty materials which enable customers to create robust, durable and versatile products and components. With strong capabilities around the world in manufacturing and science, the company works closely with customers to deliver unrivaled quality, service and reliability for today, and create innovative solutions for tomorrow. Partner with AOC and we will work together to find the right solutions for your business.

Contact us for more information

We will help you to choose the right resin solution.

emea@aocresins.com

Europe, Middle East & Africa
+41 52 6441212
emea@aocresins.com

AOC
Trusted Solutions

AOC is a registered trademark of the AOC group of companies.

The user is held responsible for checking the quality, safety and all other properties of our products prior to use. The information and recommendations contained herein are to the best of our knowledge accurate and reliable, but no rights whatsoever may be derived by any party other than those expressly agreed to with a selling entity of the AOC group of companies in a legally binding agreement. AOC hereby makes no warranty of any kind, express or implied, including those of merchantability and fitness for purpose. Unless explicitly agreed to in writing by AOC otherwise, all offers, quotations, sales and deliveries of AOC products are subject to the general conditions of sale of AOC. Atlac®, Beyone®, Daron®, NeoMould®, Neoxil®, Palatal®, Palapreg®, Synolite™, the AOC™ name, the AOC™ logo and the Trusted Solutions™ logo are the registered trademarks of the AOC group of companies

For more information: aocresins.com