

Atlac® 590

High heat Novolac Vinyl ester resin for demanding corrosive environments

Components based on Atlac® 590 feature excellent thermal and chemical resistance against solvents, acids and oxidizing media like chlorine.

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

Benefits

- Continued operation of process equipment
- Resisting elevated temperatures
- Low maintenance and low cost of ownership
- Approved by TÜV for use in Flue Gas cleaning applications
- Approved by KIWA (BRL-K 541/01) for use in underground petrol storage tanks

Major Applications

Atlac® 590 can be used in all fabrication methods, but is especially adapted to meet the requirements of filament winding, centrifugal casting, hand lay-up and spray-up processes. Atlac® 590 can also be used to fabricate glass flake coatings and mortars.

Atlac® 590 features excellent chemical resistance and is specially indicated when resistance against solvents, acids and oxidizing media like chlorine is required.

Certifications and Approvals

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

According to EN13121/1 Atlac® 590 is classified group 8. A KIWA approval (BRL-K 541/01) was obtained for use in underground petrol storage tanks.

Atlac® 590 passed testing at TÜV for use in flue gas cleaning plants.

Product Specifications

Property	Value	Unit	TM
Appearance	Clear		TM 2265
Solids content	61.5 - 64.5	%	TM 2033
Viscosity 23 °C, 100 s ⁻¹	208 - 282	mPa.s	TM 2013
Acid value	6 - 13	mg KOH/g	TM 2401
Gel time 25 until 35 °C	18 - 26	min	TM 2625
Peak time	26 - 35	min	TM 2625
Peak temperature	145 - 175	°C	TM 2625

Viscosity measurement: Z2/ 100s⁻¹/ 23°C.

Cond: 3.0 g Cobalt accelerator (1%) + 2.5 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g of resin.

Liquid			
Property	Value	Unit	TM
Density 23 °C	1080	kg/m ³	TM 2160
Stability (Solid, dark, 25 °C)	6	month	

Solid Unfilled			
Property	Value	Unit	TM
Tensile strength	90	MPa	ISO 527-2
Tensile modulus	3.5	GPa	ISO 527-2
Elongation at break	4	%	ISO 527-2
Flexural strength	155	MPa	ISO 178
Flexural E-Modulus	3.6	GPa	ISO 178
HDT	140	°C	ISO 75A
Barcol Hardness	45	-	TM 4515
Impact strength unnotched spec	13	kJ/m ²	
Water absorption 25 °C	1	%	ISO R65
Water absorption 100 °C	1.6	%	ISO R117
Tg	150	°C	DIN 53445

Cured with 1.0 g Medium reactive MEKP and 1.8 g Cobalt accelerator (1%) added to 100 g of resin. After 24 h at RT followed by post curing for 3 h at 100°C and 1 h at 150 °C .

Cured reinforced resin typical properties			
Property	Value	Unit	TM
Glass content	34	%	ASTM D2584
Tensile strength	111	MPa	ISO 527-2
Tensile modulus	101	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 unnotched	115	kJ/m ²	

Application Guidelines

Atlac® 590 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® 590 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 in a dark and dry place in original unopened and undamaged packaging at temperatures between 5°C and 30°C. Shelf life is reduced at higher temperatures, and resin properties may change during storage.

The shelf life of styrene-containing vinylester resins will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only. Exposure to direct sunlight should be avoided.

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 choose the right resin solution.

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