# 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
- Track record of performance in tough environments

## Major applications

Atlac® 590Z has excellent thermal durablity and corrosion resistance to organic solvents, acids and oxidizing media such as chlorine gas. Atlac® 590Z also offers high strength retention at elevated temperature.

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

## 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 EN12131/2. A KIWA approval (BRL-K 541/01) was achieved for underground petrol storage tanks. Atlac® 590Z passed testing at TÜV for use in flue gas cleaning plants.

### Product Specifications

| Property | Value | Unit | TM |
|---|---|---|---|
| Appearance | Clear | | TM 2265 |
| Gel time 25 until 35 °C | 12 - 25 | min | TM 2625 |
| Peak temperature | 144 - 176 | °C | TM 2625 |
| Peak time | 20 - 30 | min | TM 2625 |
| Solids content | 64 - 68 | % | TM 2033 |
| Viscosity 23 °C, 100 $s^{-1}$ | 400 - 550 | mPa.s | TM 2013 |

Reactivity @25°C: 100 g resin mixed with 1.0g NL 49P (Akzo Nobel) and then mixed with 1.0 g Butanox M50 (AKZO-Nobel).

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## Liquid resin typical properties

| Property | Value | Unit | TM |
|---|---|---|---|
| Flash point | 33 | °C | TM 2800 |
| Stability (Solid, dark, 25 °C) | 6 | month | 25 °C, dark, TM 2303 |

## Unfilled castings typical properties

| Property | Value | Unit | TM |
|---|---|---|---|
| Flexural E-Modulus | 3.7 | GPa | ISO 178 |
| Flexural strength | 148 | MPa | ISO 178 |
| HDT | 144 | °C | ASTM D648 |
| Impact strength unnotched spec | 13 | kJ/m² | ASTM D4812 |
| Elongation at break | 2.7 | % | ISO 527-2 |
| Tensile modulus | 3.6 | GPa | ISO 527-2 |
| Tensile strength | 77 | MPa | ISO 527-2 |

Curing system: Per 100g resin + 0.5g NL-49P +1.0g Butanox® M50. Curing conditions: Curing for 24 hours at R.T. + post-curing for 3 hours at 100°C + post-curing for 1 hour at 150°C.

## Cured reinforced resin typical properties

| Property | Value | Unit | TM |
|---|---|---|---|
| Flexural Modulus | 9.8 | GPa | ISO 178 |
| Flexural strength | 208 | MPa | ISO 178 |
| Glass content | 34 | % | ASTM D2584 |
| Tensile modulus | 10.1 | GPa | ISO 527-2 |
| Tensile strength | 111 | MPa | ISO 527-2 |

## 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 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.

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## 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

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**Contact us for more information**

We will help you to choose the right solution for your business.

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