

Atlac® 430

Versatile Vinyl ester resin for corrosive environments

Components based on Atlac® 430 feature high mechanical strength and exhibit excellent resistance to chemicals and heat.

With Atlac® 430 resin you can make strong and durable parts both with carbon and with glass fiber.

Benefits

- Continued operation of process equipment
- Resisting elevated temperatures
- Great mechanical strength and ductility
- Low maintenance and low cost of ownership
- Can be used with carbon and glass fiber

Major Applications

Atlac® 430 can be used in all fabrication methods, but is especially adapted to meet the requirements of filament winding, centrifugal casting, pultrusion, hand lay-up and spray-up applications.

Atlac® 430 is medium reactive and medium viscous. Atlac® 430 provides resistance to a wide range of acids, alkali, and bleaches for the use in corrosive environments in the chemical processing industry.

The favorable combination of thermal resistance and elongation makes this resin suitable for applications exposed to intermittent temperatures.

Certifications and Approvals

Cured non-reinforced Atlac® 430 conforms to type 1310 according to DIN 16946/2 and is classified group 5 according to DIN 18820/1. According to EN13121/1 Atlac® 430 is classified group 7A.

The resin is certified by Lloyd's Register as gelcoat base resin and laminating resin for use in Marine applications.

Product Specifications

| Property | Value | Unit | TM |
|--------------------------------------|-----------|-------|---------|
| Appearance | Clear | | TM 2265 |
| Color Lico Gardner | 0 - 5.5 | G | TM 2017 |
| Solids content | 59 - 62 | % | TM 2033 |
| Viscosity 23 °C, 100 s ⁻¹ | 440 - 500 | mPa.s | TM 2013 |
| Gel time 25 until 35 °C | 10 - 15 | min | TM 2625 |
| Peak time | 18 - 24 | min | TM 2625 |
| Peak temperature | 140 - 160 | °C | TM 2625 |

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

Reactivity measurement: 2.0 g (MEKP) Low reactive Methyl Ethyl Ketone Peroxide and 1.0 g Cobalt accelerator (1%) added to 100 g resin

| Liquid | | | |
|--------------------------------|--------|-------------------|---------|
| Property | Value | Unit | TM |
| Density 23 °C | 1060 | kg/m ³ | TM 2160 |
| Refractive index | 1.5675 | - | TM 2150 |
| Flash point | 33 | °C | TM 2800 |
| Stability (Solid, dark, 25 °C) | 6 | month | |
| Acid value | 7 | mg KOH/g | TM 2401 |

| Solid Unfilled | | | |
|---------------------|-------|-------------------|-----------|
| Property | Value | Unit | TM |
| Density 20 °C | 1145 | kg/m ³ | DIN 53479 |
| Tensile strength | 95 | MPa | ISO 527-2 |
| Tensile modulus | 3.6 | GPa | ISO 527-2 |
| Elongation at break | 6.1 | % | ISO 527-2 |
| Flexural strength | 150 | MPa | ISO 178 |
| Flexural E-Modulus | 3.4 | GPa | ISO 178 |
| Outer fiber strain | 6.5 | % | ISO 178 |
| HDT | 105 | °C | ISO 75A |
| Impact strength | 28 | kJ/m ² | ISO 179 |
| Tg | 130 | °C | DIN 53445 |

Cured with 1.0% (MEKP) Low reactive Methyl Ethyl Ketone Peroxide and 0.5 ml 1% Cobalt accelerator (1%) added to 100 g of resin. After 24h at RT followed by post curing for 24 h at 80°C. For HDT and Tg a post cure of 24 h at 120 °C was applied.

| Cured reinforced resin typical properties | | | |
|---|-------|-------------------|------------|
| Property | Value | Unit | TM |
| Density 20 °C | 1440 | kg/m ³ | |
| Glass content | 38.6 | % | ASTM D2584 |
| Tensile strength | 138 | MPa | ISO 527-2 |
| Tensile modulus | 10 | GPa | ISO 527-2 |
| Flexural strength | 210 | MPa | ISO 178 |
| Flexural Modulus | 10 | GPa | ISO 178 |
| Thermal conductivity | 0.2 | W/m.K | DIN 52612 |

Cured with 1 ml (MEKP) Low reactive Methyl Ethyl Ketone Peroxide and 0.5 ml Cobalt accelerator (1%) added to 100 g resin. Cured for 24 h at room temperature and 24 h at 80°C.

Laminates were based on 4 layers of 450 g/m² chopped strand mat.

Application Guidelines

Atlac® 430 normally exhibits 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® 430 are intended for contact with chemicals. Atlac® 430 may be cured using MEK-Peroxide with low active oxygen content (e.g. Low reactive MEKP) and CHP (Cumene hydroperoxide).

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 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.

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 choose the right resin solution.

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