Atlac® 580 ACT

Vinyl ester urethane resin used for components and skin coats in Marine applications

Atlac® 580 ACT resin is broadly used for making fiber reinforced components through Hand lay-up and Spray-up processes. Skin coats based on Atlac® 580 ACT resin provide a unique combination of hydrolysis resistance, thermal stability, and ductility.

The Atlac® 580 ACT resin has been certified by Lloyd's Register and RINA for use in Marine.

Benefits

- Easy processing through excellent de-aeration and fiber wetting
- Excellent hydrolysis resistance
- Certified by Lloyd's Register and RINA
- Unique combination of thermal resistance and ductility

Product Specifications

Property	Value	Unit	TM
Solids content	49.5 - 52.5	%	TM 2033
Viscosity 23 °C, 2 s^{-1}	1000 - 1600	mPa.s	TM 2313
Viscosity 23 °C, 20 s^{-1}	500 - 600	mPa.s	TM 2313
Viscosity 23 °C, 250 s^{-1}	370 - 430	mPa.s	TM 2313
Acid value	4 - 8	mg KOH/g	TM 2401
Gel time 25 until 35 °C	25.5 - 31.5	min	TM 2625
Peak time	42.5 - 52.5	min	TM 2625
Peak temperature	125 - 155	°C	TM 2625
Water content	0 - 0.1	%	TM 2350

Viscosity measurement: Z2/23°C. Reactivity measurement: 1.5 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g of resin

Major Applications

Atlac® 580 ACT resin is broadly used for skin coats in the manufacturing of boats and vessels. Components made with Atlac® 580 ACT show excellent hydrolysis resistance and good thermal stability, and are resistant to many aqueous media, acidic salts, alkaline media and to hot water. The resin offers an outstanding combination of heat resistance and flexibility.

Atlac® 580 ACT has excellent wet out and de-aerating properties for easy processing. Compared to conventional Vinyl ester resins foaming with MEK peroxide is highly reduced in Atlac® 580 ACT, resulting in reduced air inhibition both inside the laminate and at the surface.

The resin features enhanced thixotropic behavior preventing rinse off inclined mold surfaces, and shows an improved compatibility with aramid fiber reinforcements. The resin provides low exothermic reaction during cure allowing thick sections to be fabricated in one go. At the same time, through cure in thin laminates is favored by excellent curing characteristics.

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Liquid

Property	Value	Unit	TM
Density 23 °C	1050	kg/m³	TM 2160
Flash point	33	°C	TM 2800
Stability (Solid, dark, 25 °C)	3	month	

Solid Unfilled

Property	Value	Unit	TM
Density 20 °C	1110	kg/m³	DIN 53479
Tensile strength	83	MPa	ISO 527-2
Tensile modulus	3.5	GPa	ISO 527-2
Elongation at break	4.2	%	ISO 527-2
Flexural strength	153	MPa	ISO 178
Flexural E-Modulus	3.6	GPa	ISO 178
HDT	115	°C	ISO 75A
Impact strength unnotched spec	15	kJ/m²	
Water absorption 25 °C	0.16	%	ISO R65
Water absorption 100 °C	0.22	%	ISO R117
Tg	132	°C	DIN 53445

Cured with 1.5 g (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide added to 100 g of resin. After 24 h at RT followed by post curing for 3 h at 100 °C.

Cured reinforced resin typical properties

Property	Value	Unit	TM
Density 20 °C	1320	kg/m³	
Glass content	30	%	ASTM D2584
Tensile strength	105	MPa	ISO 527-2
Tensile modulus	7.4	GPa	ISO 527-2
Flexural strength	160	MPa	ISO 178
Flexural Modulus	6.8	GPa	ISO 178
Compressive Strength	175	MPa	ASTM D695
Thermal conductivity	0.21	W/m.K	DIN 52612
Impact strength unnotched	115	kJ/m²	

Laminates made with 1.5 % (MEKP) Medium reactive Methyl Ethyl Ketone Peroxide. After 24 h. at RT followed by post curing for 3 h. at 100 °C.

Laminates were based on 4 layers of 450 g/m^2 chopped strand mat.

Application Guidelines

The potlife of 200g Atlac 580 ACT with 3% of Medium reactive MEKP is approximately 20 minutes at a temperature of 25°C, 35 minutes at 20°C, and 45 minutes at 15°C.

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

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 the properties of the resin might change during storage.

The shelf life of styrene containing Vinyl ester 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

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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