

## Product data

## Atlac 580

### Chemical/physical nature

Atlac 580 is a high-grade bisphenol A vinyl ester urethane resin, which combines exceptional chemical resistance and an outstanding combination of heat resistance and flexibility. Furthermore Atlac 580 has very good handling and curing properties. Atlac 580 is resistant to many aqueous acidic salts and alkaline solutions. Especially against alkaline media and hot water Atlac 580 has an outstanding performance.

### Major applications

Atlac 580 can be used in all fabrication methods, but is especially adapted to meet the requirements of filament winding, centrifugal casting and spray-up applications. Extra additional of styrene leads to viscosities which are needed for resin injection moulding techniques.

### Principal properties

Atlac 580 has excellent wet-out and deaeration properties. It produces less foam when peroxides are added with less air inhibition, resulting in a tack free cured surface.

Due to its urethane incorporation, Atlac 580 can be thixotropised easily and shows an improved compatibility with aramid fibre reinforcements. Atlac 580 has a low exotherm in curing allowing thick sections to be fabricated.

### Product specifications

Property	Range	Unit	TM
Viscosity, 23°C	400 - 500	mPa.s	2013
Solids content, IR	52 - 54	%	2033
NCO content	0.00 - 0.03	%	2220
Appearance	Hazy	-	2265
Water content	600	ppm	2350
Acid value, as such	3-7	mg KOH/g	2401
Gel time from 25 to 35°C	33 - 43	minutes	2625
Cure time from 25°C to peak	46 - 61	minutes	2625
Peak temperature	110 - 135	°C	2625
Colour	Yellow	-	4073

### Remarks

Viscosity: 23°C, Physica, Sp. Z2, 100 s<sup>-1</sup>  
 Gelttime: 2,5 g NL49 + 1,0 g NL63 -10 P +  
 1,0 g Butanox M 50

### Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 23°C	appr. 1074	kg/m <sup>3</sup>	2160
Flash point	appr. 33	°C	2800
Stability, no init., dark, 25°C	6	months	-

### Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Density, 20°C	1110	kg/m <sup>3</sup>	-
Tensile strength	83	MPa	ISO 527-2
Mod. of elasticity in tension	3.5	GPa	ISO 527-2
Elongation at break	4.2	%	ISO 527-2
Flexural strength	153	MPa	ISO 178
Mod. of elasticity in bending	3.6	GPa	ISO 178
Impact res. - unnotched sp.	15	kJ/m <sup>2</sup>	ISO 179
Heat deflection temp. (HDT)	115	°C	ISO 75-A
Glass transition temp. (Tg)	132	°C	DIN 53445
Hardness	40	Barcol	2604

### Properties of cast filled resin (typical values)

Property	Value	Unit	TM
Glass content	30	%	-
Density, 20°C	1320	kg/m <sup>3</sup>	-
Tensile strength	105	MPa	ISO 527-2
Mod. of elasticity in tension	7.4	GPa	ISO 527-2
Flexural strength	160	MPa	ISO 178
Mod. of elasticity in bending	6.8	GPa	ISO 178
Mod. of elasticity in bending	6.8	GPa	ISO 178
Impact res. - unnotched sp.	115	kJ/m <sup>2</sup>	ISO 179
Glass transition temp. (Tg)	132	°C	DIN 53445
Linear expansion	30 x 10 <sup>-6</sup>	C-1	ASTM D 696
Thermal conductivity	0.21	W/m.k	DIN 52612

### Curing conditions

All properties are measured at 20°C unless otherwise specified.  
 Cure system: 0.5% NL63-10P, 0.5% NL51P and 1.5% Butanox M-50.

All samples were cured during 24 hrs at ambient temperature, followed by a postcure of 3 hrs at 100°C. Glass mat used OCF M 710 or Vetrotex M 113 (450 g/m<sup>2</sup>).

### Remarks on cure agents

Butanox M-50 (Methyl ethyl ketones peroxide 50%), NL 51P (Cobalt octoate, 6% solution) and NL63-10P (Dimethylaniline, 10% solution) are AKZO NOBEL products

### Guidelines before use

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

### Storage guidelines

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

Shelf life is reduced at higher temperatures.

The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only.

### Material Safety

A material safety data sheet for the product is available on request.

### Test methods

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



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