

Product Data Sheet

Atlac 430

Chemical/physical nature

Atlac 430 is an epoxy bisphenol A vinyl ester, dissolved in styrene.

Performance

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

Major applications

Atlac 430 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 applications.

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 EN12131/2 Atlac 430 is classified group 7A.

Product specifications upon delivery

Property	Range	Unit	TM
Viscosity, 23 °C	440 - 500	mPa.s	2013
Colour, Lico 200	0.0 - 5.5	G	2017
Solids content, IR	59 - 62	%	2033
Appearance	clear	-	2265
Cure time from 25 to 35°C	10 - 15	Min	2625
Cure time from 25°C to peak	17 - 24	Min	2625
Peak temperature	140 - 160	°C	2625

Remarks

TM2013: Z2/100 s⁻¹/23°C

TM2625: 2.0 g Butanox LPT-IN and 1.0 g Accelerator NL 49P (both AKZO-Nobel) added to 100 g resin

Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 23°C	1060	kg/m ³	-
Refractive index	1.5675	-	2150
Flash point	33	°C	2800
Acid value, as such	7	mg KOH/g	2401
Stability, no init., dark, 25°C	6	Mon	-

Typical values of cast unfilled resin

Property	Value	Unit	TM
Density, 20°C	1145	kg/m ³	-
Tensile strength	95	MPa	ISO 527-2
Mod. of elasticity in tension	3.6	GPa	ISO 527-2
Elongation at break	6.1	%	ISO 527-2
Flexural strength	150	MPa	ISO 178
Mod. of elasticity in bending	3.4	GPa	ISO 178
Elongation in flex	6.5	%	ISO 178
Impact res. - unnotched sp.	28	kJ/m ²	ISO 179
Heat deflection temp. (HDT)	105	°C	ISO 75-A
Glass transition temp. (Tg)	130	°C	DIN 53445

Curing conditions

Cured with 1 ml Butanox LPT-IN (AKZO-Nobel) and 0.5 ml Co-oct. solution (1 % Co in styrene) added to 100 g resin. Cured 24 h at room temperature and 24 h at 80°C. For HDT and Tg dyn post-curing 24 h at 120°C.

Properties of cured glass reinforced resin (typical values)

Property	Value	Unit	TM
Density	1440	kg/m ³	-
Glass content	38.6	%	ASTM D 2584
Tensile strength	138	MPa	ISO 527-2
Mod. of elasticity in tension	10	GPa	ISO 527-2
Flexural strength	210	MPa	ISO 178
Mod. of elasticity in bending	10	GPa	ISO 178
Linear expansion	30 x 10 ⁻⁶	K-1	-
Thermal conductivity	0.2	W/m.K	DIN 52612

Curing conditions

Cured with 1 ml Butanox LPT-IN (AKZO-Nobel) and 0.5 ml Co-oct. solution (1 % Co in styrene) added to 100 g resin. Cured 24 h at room temperature and 24 h at 80°C. Laminates were based on 4 layers of 450 g/m² chopped strand mat.

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Processing

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 optimised 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 a low content of hydrogen peroxide (e.g. Butanox LPT-IN, Curox M-102, with CHP and cumene hydroperoxide (e.g. Trigonox 239, Luperox Cu 50 VE).

Guidelines before use

The resin should be conditioned at a well defined, application dependant temperature (usually 15 °C minimum for a MEKP/Co cure).

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 and the properties might change during storage. 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 of this product is available on request.

Test Methods

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

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