World Leader in Resin Technology

Altek™
H596-ESA-30
Polyester Resin

Product Information

Altek General Purpose Orthophthalic Polyester Laminating Resin

TYPICAL CAST MECHANICAL PROPERTIES* (1) see back page

Test	Units of Measure	Nominal	ISO Methods
Tensile Strength	MPa	83	ISO 527-1
Tensile Modulus	GPa	4.1	ISO 527-1
Tensile Elongation	%	3.2	ISO 527-1
Flexural Strength	MPa	135	ISO 178
Flexural Modulus	GPa	4	ISO 178
Heat Distortion Temperature	°C	64	ISO 75-A

*Typical properties are not to be construed as specifications.

TYPICAL LIQUID RESIN PROPERTIES at 25°C * (2) see back page

Test	Units of Measure	Nominal
Viscosity Brookfield, LV #3@60	cps	450
Thix Index, 6/60		3
Styrene Content	%	40
Gel Time, 100g	minutes	30
1.5% Butanox M-50		
Total Cure time	minutes	41
Peak Exotherm	°C	140

DESCRIPTION

AOC's H593-ESA-30 is a medium reactive, general purpose thixotropic promoted orthophthalic based polyester resin. The product contains a blue catalyst indicator.

BENEFITS

Good Secondary Bonding

Altek H593-ESA-30 provides good chemical bonding between laminate application if proper application procedures are followed.

Superior Mechanical Properties

When used with the proper glass reinforcement content, AOC's Altek H593-ESA-30 produces a composite with superior toughness properties that can assist in the reduction of composite cracking.

APPLICATION

Altek H593-ESA-30 is designed for fabrication of numerous types and sizes of composite parts.

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PERFORMANCE GUIDELINES

A. Keep full strength catalyst levels between 1.25% - 2.0% of the total resin weight.

B. Maintaining shop temperatures between 65°F/18°C and 90°F/32°C and humidity between 40% and 90% will help the fabricator make a high quality part. Consistent shop conditions contribute to consistent gel times viscosity.

STORAGE STABILITY

Resins are stable for six months from date of production when stored in the original containers away from sunlight at no more than 21°C. After extended storage, some drift may occur in gel time.

During the hot summer months, no more than two months stability at 86°F/30°C should be anticipated.

SAFETY

See appropriate Material Safety Data Sheet for guidelines.

APPLICATION GUIDELINES

AOC's Altek H593-ESA-30 provides good secondary bonding under normal conditions. However, exposing the laminate to direct sunlight, high temperatures, or dusty conditions can greatly reduce secondary bonding. The non air inhibited version of Altek H593-ESA-30 is designed to provide a good fast surface cure. Secondary bonding with this resin can be reduced over an extended period of time even under normal conditions. After an extended period of time it may be necessary to abrade the laminate to insure the maximum secondary bonding.

To assure adequate bonding to gel coats, fabricators should pre-wet the gel coat surface with a thin pass of catalyzed resin prior to lamination.

Chemical resistance studies indicate that resins like Altek H593-ESA-30 have very poor resistance to certain hydrophobic liquids, such as hydrocarbons. Fuel storage tanks should not be produced with Altek H593-ESA-30 resin.

If your manufacturing needs require a more corrosion resistant resin, please contact your AOC representative for information or technical assistance on AOC's line of isophthalic or vinyl ester resins.

ISO 9001:2008 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2008 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.

FOOTNOTES

(1)

The gel times shown are typical but may be affected by catalyst, promoter and inhibitor concentrations and resin, mold and shop temperature. Variations in gelling characteristics can be expected between different lots of catalysts and at extremely high humidities. Pigment and fillers can retard or accelerate gelation. It is recommended that the fabricator check the gelling characteristics of a small quantity of resin under actual operating conditions prior to use.

(2)

Based on tests run at 77°F/25°C and 50% relative humidity. All tests performed on unreinforced cured resin castings. Thixotropic components, if applicable, are excluded from casting samples. Castings are post cured.