

Synolite™ 8175-W-1

Halogen-free fire retardant unsaturated polyester resin

Components based on Synolite™

8175-W-1 feature excellent fire retardant, low smoke & toxicity properties.

Benefits

- Halogen-free
- Excellent fire retardant, low smoke & toxicity properties
- Good heat resistance
- Good mechanical properties
- Easy processing

Chemical/Physical Nature

Synolite™ 8175-W-1 is a fire retardant unsaturated polyester resin, pre-accelerated, thixotropic and filled. It is a halogen free resin.

Application

Synolite™ 8175-W-1 is designed for ease of fabrication using hand lay-up, filament winding techniques. Components based on Synolite™ 8175-W-1 feature excellent fire retardant, low smoke & toxicity properties. And recommended for building & construction, transportation fire retardant applications.

Approvals

Germany S4/SR2/ST2 DIN 5510-2
France M2/F1 NFF 16-101
China Conform TB/T 3138
China B1 GB 8624
Remark: Glass fiber content about 40%

Product Specification

Property	Value	Unit	TM
Appearance	Beige	-	TM 2265
Solids content, IR drying	74.5-77.5	%	TM 2033
Viscosity @23°C (20S ⁻¹)	670-870	mPa.s	TM 2313
Viscosity @23°C (50S ⁻¹)	600-680	mPa.s	TM 2313
Viscosity @23°C (250S ⁻¹)	520-580	mPa.s	TM 2313
Gel_Time (25 until 35°C)	9-11	minutes	TM 2625
Cure_Time (25°C until peak)	18-24	minutes	TM 2625
Peak Temp	115-135	°C	TM 2625

Remarks

Reactivity measurement: 2.5 g Butanox® M50 (Nouryon) added to 100 g resin.
Viscosity measurement: Physica MC1+/Z2/23°C

Liquid resin typical properties

Property	Value	Unit	TM
Density, 23 °C	1460	kg/m ³	TM 2160
Flash point	33	°C	TM 2800
Stability, no initiator, dark, 25 °C	4	Month	-

Fiber reinforced UPR typical properties

Property	Value	Unit	TM
Tensile strength	150	MPa	ISO 527-2
Tensile modulus	15	GPa	ISO 527-2
Tensile elongation	2.0	%	ISO 527-2
Flexural strength	240	MPa	ISO 178
Flexural modulus	10	GPa	ISO 178
Unnotched impact strength	200	kJ/m ²	ISO 179

Remarks

1. Curing conditions: After 24h at RT followed by post curing for 24h at 80 °C
2. Laminates: 4 layers CSM(300g/m²) and 3 layers WR(400g/m²) ,Glass fiber content about 30%

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 and the properties of the resin might change during storage. 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.

Processing Guidelines

- A. Before use, the resin should be conditioned at a well-defined, application dependant temperature (usually 15°C minimum for a MEKP / Co cure).
- B. Synolite™ 8175-W-1 contains Cobalt accelerator. For peroxide, MEKP is recommended. Be sure that the peroxide is in shelf life.
- C. Maintain shop temperatures between 18 °C and 32 °C and humidity between 40% and 90%. Consistent shop conditions contribute to consistent gel times and will help the fabricator make a high quality part.
- D. Stir very well the product before use. It is suggested to avoid styrene dilution in order to maintain fire retardant properties.
- E. It is possible to increase the fire resistance performance by adding 5-7% fire retardant to the resin.
- F. The final state of cure may further be optimized by post-curing at elevated temperatures (e.g. 80 °C) for several hours.

ISO 9001:2015 Certified

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Brochures

You can find additional information through the Fire Retardant Brochure. It is available from our Business Technical Supports Engineer and Account Manager.

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