

## Technical Datasheet

# INEOS Composites

## AROPOL™ M 105 TBR Low Styrene Emission Resin

AROPOL M 105 TBR is a low styrene emission unsaturated polyester resin based on orthophthalic acid. Styrene emission under working conditions is reduced by up to 50% compared to standard resin. When working with AROPOL M 105 TBR emission is only 2-5% of polyester resin usage whilst it is 5-10% with standard polyester resin. Excellent glass fiber wet out properties and easiness of application is characteristic for AROPOL M 105 TBR.

AROPOL M 105 TBR is a thixotropic and pre-accelerated unsaturated polyester resin with moderate geltime and very low peak exotherm.

### Typical liquid resin properties

Property at 23 C	Typical value	Unit	Method
Viscosity, Brookfield RV2, 10 rpm	1400	mPas	ISO 2555
Viscosity, cone&plate	180	mPas	ISO 2884
Styrene content	41	%	ASTM D 1644
Density	1,1	kg/dm3	ISO 2811
Geltime, 1% MEKP-50	45	min	Hc-04a
Peak exotherm	80	°C	Hc-04a

### Typical cured resin properties

Property (postcured 24h at 50 C)	Value	Unit	Method
Tensile strength	55	MPa	ISO 527
Tensile modulus	3600	MPa	ISO 527
Elongation at break	2,0	%	ISO 527
Flexural strength	90	MPa	ISO 178
Flexural modulus	4100	MPa	ISO 178
Heat deflection temperature (HDT)	66	°C	ISO 75/2 (A)
Hardness	45	Barcol	ASTM D2583
Water absorption 24 hours	19	mg/sample*	ISO 62-80
Water absorption 28 days	92	mg/sample*	ISO 62-80
* sample 50x50x4 mm*			

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**Application and use** AROPOL M 105 TBR resin is suitable for spray-up, hand lay-up and filament winding methods for manufacturing numerous FRP products for the building and construction, transportation and marine markets.

Due to the low peak exotherm and low heat development when curing, AROPOL M 105 TBR can be used in building a laminate thickness of 3-15 mm wet on wet. The long "green stage" of the resin also allows easy trimming of the laminate before the final cure.

**Certificates and approvals** AROPOL M 105 TBR resin is approved by Lloyd's Register and complies with the requirements of ISO 12215-1 standard for construction of small crafts.

The manufacturing, quality control and distribution of products, by INEOS Composites, are complying with one or more of the following programs or standards: ISO 9001, ISO 14001 and OHSAS 18001.

### Additional information

MEK peroxide influence on geltime	1.0% MEKP	1.25% MEKP	1.5% MEKP
M 105 TA	20 min	17 min	14 min
M 105 TAR	25 min	20 min	17 min
M 105 TB	40 min	32 min	25 min
M 105 TBR	45 min	35 min	28 min
M 105 TC	60 min	48 min	38 min
M 105 TCR	60 min	48 min	38 min

**Handling and storage** It is highly recommended that all material is stored at stable temperatures under 20°C preferably indoors, and away from direct sunlight. Prolonged storage outside of recommended conditions can influence liquid resin properties like viscosity and gel time. It is also strongly recommended to mix resin thoroughly before use. Shelf life of AROPOL M 105 TBR is six (6) months.

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#### Notice

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INEOS Composites requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.