

TECHNICAL DATA SHEET

COMPOGRAPH 140-TA

Edition date: 26/02/2019

VERSIÓN: REV00

Product range:



DESCRIPTION

COMPOGRAPH 140-TA is an orthophthalic unsaturated polyester resin of last generation modified with Graphene nanotechnology, for use in the manufacture of nano-hybrid Composites that considerably increases the mechanical, physical and biological properties. The resin is semi flexible type and of medium reactivity.

COMPOGRAPH 140-TA is pre-accelerated with cobalt salts and contains a thixotropic agent.

MAIN PROPERTIES

COMPOGRAPH 140-TA is characterized by the excellent mechanical characteristics of the laminates manufactured with it, clearly superior to those obtained with other resins of general use. Also, its chemical resistance against diluted acids and alkalis is good. In general, its use is recommended in those cases in which good mechanical and/or chemical properties are required.

APPLICATION

COMPOGRAPH 140-TA can be applied both in Wet lay-up and Spray lay-up, presenting a minimum drop out on the vertical surfaces due to its thixotropy. Its field of application is wide, being able to be used for the manufacture of boats, tanks, bodies, silos, etc.

PHISICAL DATA IN LIQUID STATE

Properties	Value	Unit	Test method
Appearance	Dark Liquid		Visual
Volatile content	39-43	%	ASTM D-1644
Acid value, maximum	30 MAX	Mg KOH/gr	ASTM D-1639
Peak Temperature	120-140	°C	MA-001
Time to maximum	32-48	Min	MA-001
Geltime at 25° (100/0.3 Co/1.5 PMEK)	20-30	Min	MA-001
Viscosity Brookfield @25°/H2V30	550-650	CPS	ASTM D-2196

TYPICAL CLEAR CASTING PROPERTIES

Unfilled resin

Properties	Value	Unit	Test method
Tensile Strength	53	Mpa	ISO 527-1
Tensile Modulus	3800	Mpa	ISO 527-1
Tensile Elongation	1.6	%	ISO 527-1
Flexural Strength	81	Mpa	ISO 178
Flexural Modulus	3700	Mpa	ISO 178
Maximum Flexural dL	4.1	mm	ISO 178
Hardness	>47	Barcol	ASTM-2583
Heat Distortion Temperature	70	°C	ASTM-648

Make of specimens: Simple pouring, manual grinding.

Curing condition: BUTANOX M50 at 1.5%. 2 hours at 40° + 2 hours at 50°

PROPERTIES OF THE RESIN REINFORCED WITH DISCONTINUOUS GLASS FIBRE AT 30%.Laminate building up: 3 x CSM 300 gr/m².

Properties	Value	Unit	Test method
Tensile Strength	81	Mpa	ISO 527-4
Tensile Modulus	7400	Mpa	ISO 527-4
Tensile Elongation	1.8	%	ISO 527-4
Flexural Strength	191	Mpa	ISO 14125
Flexural Modulus	6000	Mpa	ISO 14125
Maximum Flexural dL	3.2	mm	ISO 14125
Hardness	>55	Barcol	ASTM-2583

Make of specimens: Hand lay-up. CNC milling.

Curing condition: BUTANOX M50 at 1.5%. 2 hours at 40 °C + 2 hours at 50 °C.

PROPERTIES OF THE RESIN REINFORCED WITH CONTINUOUS GLASS FIBRE AT 50 %.

Laminate building up: 2 x QUADRIAXIAL 1200 gr/m².

Properties	Value	Unit	Test method
Tensile Strength*	199	Mpa	ISO 527-4
Tensile Modulus*	13600	Mpa	ISO 527-4
Tensile Elongation*	2.9	%	ISO 527-4
Flexural Strength	340	Mpa	ISO 14125
Flexural Modulus	10000	Mpa	ISO 14125
Maximum Flexural dL	7.50	mm	ISO 14125
Impact Resistance	490	kJ/m ²	ISO 179-1
Hardness	>60	Barcol	ASTM-2583

Make of specimens: Hand lay-up. CNC milling.

Curing condition: BUTANOX M50 at 1.5%. 2 hours at 40 °C + 2 hours at 50 °C.

PROPERTIES OF THE RESIN REINFORCED WITH CONTINUOUS GLASS FIBRE AT 59%

Laminate building up: 2 x UNIDIRECTIONAL 1000 g/m².

Properties	Value	Unit	Test method
Tensile Strength	631	Mpa	ISO 527-5
Tensile Modulus	27800	Mpa	ISO 527-5
Tensile Elongation	5.0	%	ISO 527-5
Flexural Strength	1018	Mpa	ISO 14125
Flexural Modulus	20300	Mpa	ISO 14125
Maximum Flexural dL	6.5	mm	ISO 14125
Hardness	>65	Barcol	ASTM-2583

Make of specimens: Hand lay-up. CNC milling.

Curing condition: BUTANOX M50 at 1.5%. 2 hours at 40 °C + 2 hours at 50 °C.

STORAGE

COMPOGRAPH 140-TA is chemically stable when storage in closed drum at 20°C up to three months.

INSTRUCTIONS FOR USE

It is important to perform a correct agitation of the product each time a transfer is made from the supplier drum. To homogenize and avoid the precipitation of graphene particles it is advisable to use pneumatic mixers. The drum packaging of the entire COMPOGRAPH range are equipped with a locking ring closing.

The correct dosage of the curing system is essential to achieve the maximum benefits of the resin. Any product other than the one indicated in this TDS will alters its performance.

COMPOGRAPH 140-TA is designed for use between 15 °C and 30 °C. At lower temperatures the resin thickens and may become impractical. At higher temperatures, gel times will be significantly reduced. The maximum relative humidity for its use is 70%

HEALTH AND SAFETY

For the handling of this resin should take the usual precautions regarding safety (gloves, mask, good ventilation, away from any flame, etc.), since it contains volatile and flammable products.

Organic peroxides used as catalysts should never be mixed directly with accelerators or other reducing substances, as they can react violently.

Please consult the Material Safety Data Sheet, available separately, for complete information on preventing and risks during handling and use.