ELIUM® 188 XO
Technical Data sheet

Key Features

- Unique 2 parts reactive Liquid Thermoplastic Resin with low exothermy
- Formulation for Vacuum Assisted Resin Infusion process of thick part and/or tool with material temperature restriction
- Low viscosity for easy wettability with fibers
- Curing at room temperature, adjustable reactivity with heat
- High mechanical properties, superior impact and fatigue resistance
- Advantage for being recyclable, thermoforming and more...

Product Description

Elium® is an acrylic polymer diluted in a reactive monomer blend with processing additives that makes it very fluid. A polymerization initiator is mixed with the resin to create a high molecular weight thermoplastic matrix. Elium® enables the user to obtain high performance composite products like standard resin with all the benefits of a thermoplastic matrix. Elium® can be recycled by two methods, mechanically or chemically, to produce new recycled composites parts.

ELIUM® 188 XO is specifically formulated for infusion process with low viscosity, low exothermy and large open time to fulfill the requirements of large composite parts made by vacuum assisted resin infusion (VARI, VARTM) and in particular thick parts.

ELIUM® 188 XO is highly compatible with glass fiber to facilitate wettability and to maximize the final performance of the composite parts. Final part can be optionally post-cured to ensure maximum performance.

ELIUM® 188 XO is perfectly adapted to marine and wind industry, to produce large parts with thick sections like roots of wind blade structures

Properties

Typical uncured resin properties

Property	Units	ELIUM® 188 XO	Standard
Appearance	-	Colorless Limpid liquid	
Liquid Density	g/cm3	1,01	ISO1675
Viscosity@25°C	m.Pa.s	100	ISO2555
Peaktime@25°C	min	60-90	ISO2535

Peroxide Ratio: 3 phr recommended (per hundred resin)

Pot life/Gel Time is significantly depending on the ambient temperature and the amount of resin mixed. Hand or Machine mixing at room temperature >15°C. We recommend a minimum of 20°C as ambient temperature for optimal results.
We recommend a minimum of 20°C as ambient temperature for optimal results. If you need longer or shorter reactivity, please visit www.elium-composites.com and contact us.

Shelf Life: 6 months when stored in sealed containers, protected from light and at a temperature below 30 °C.
Carefully stir and mix the resin before use and preparation

Typical cured non reinforced resin properties *

Property	Units	Value	Standard
Cured Density	g/cm3	1,178	ISO1183-1
Heat Deflection Temp	°C	78	ISO75-2
Glass Transition Temp (Tan δ)	°C	102	ISO6721-5
Barcol Hardness	-	49	ASTMD2583
Water uptake7days@23°C	-	0,55%	ISO62
Tensile Strength	MPa	52,9	ISO527-2
Tensile Modulus	GPa	3,0	ISO527
Tensile Elongation@break	-	2,6%	ISO527
Flexural Strength	MPa	85,2	ISO178
Flexural Modulus	GPa	3,1	ISO178
Flexural Elongation @max Strength	-	3,2%	ISO178

* Properties are based on DNV GL Test Report, resin with 3phr Dibenzoyl Peroxide at room temperature 24h@23°C, post-cured 2h@80°C

Materials

Peroxide: Benzoyl peroxide (50% active)

Release agent: acrylic resin type

Consumables/Ancilleries: With appropriate temperature class, PA peel ply preferred

Core Materials: PET / PMI FOAM, X-linked PVC, Balsa wood.

! not compatible core Materials **!**

SAN, PS, linear PVC, PE, PU

Glass Fiber: use multicompatible or vinylester sizing

Carbon fiber: not compatible

PPE: Nitrile gloves, safety glasses with side shields, respiratory face mask

Infusion setup

Degassing is highly recommended with vacuum level below -950 mbars and <25°C.

Leak/Vacuum test is mandatory with vacuum drop test < 5 mbars for 10 minutes prior to infusion

Recommended Post-curing conditions: 2h@80°C or 16h@40°C

Storage and Handling

Standard packages: 180kg drum, IBC 900kg. Read carefully the material safety data sheet (MSDS),

Disclaimer

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http://www.arkema.com/en/products/product-safety/disclaimer/index.html

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