

Product Description

Resin Elium® is an acrylic polymer diluted in a reactive monomer blend with processing additives that makes it very fluid.

A polymerisation initiator is mixed with the resin to create an high molecular weight thermoplastic composite.

Resin Elium® enables to obtain high performance composite products with standard manufacturing process with all the benefits of a thermoplastic polymers.

Resin Elium® can be recycled with two methods, mechanically or chemically, to produce new recycled composite parts.

Product Selector

	Viscosity (cP @25°)	Reactivity	Processing temperature	Process	Comments
Elium® 158 O	100	15 - 60 min	20 - 60°C	INFUSION	
Elium® 188 O	100	60 - 90min	20 - 60°C	INFUSION	DNV Certified
Elium® 188 XO	100	60 - 90min	20 - 60°C	INFUSION	DNV Certified-Low Exothermy
Elium® 151 XO / SA	100	< 60 min	20 - 60°C	INFUSION	Low Exothermy
Elium® 191 XO / SA	100	> 60 min	20 - 60°C	INFUSION	Low Exothermy
Elium® 351 EOT	300	30 - 60 min	20 - 40°C	HLU	Thixotropy
Elium® 190	100	5 - 180 min	40 - 110°C	RTM	
Elium® C195 E	100	2 - 5 min	80 - 115°C	PREPREG - WINDING - PULTRUSION	
Elium® 591	500	2 - 5 min	80 - 115°C	PULTRUSION	
Elium® C599 E	500	2 - 5 min	80 - 115°C	PULTRUSION	Rebar
Elium® MC590	500	2 - 5 min	80 - 115°C	SMC	MgO Thickenable
Elium® MC1590	1500	2 - 5 min	80 - 115°C	SMC	MgO Thickenable
Elium® C040	15	40 - 50 min	20 - 60°C	CASTING	
Elium® C445	300	20 min	20°C	CASTING	
Elium® I262 EXO	200	45 min	20°C	CASTING	Impact Modified

Choose the Elium® grade depending on the viscosity, reactivity and your process specifications (Pot life, processing time, temperature, mechanical properties, part thickness, etc).



ELIUM® GRADE: 188 O / 191 XO/SA

Low viscosity for fast infusion, long open time and low exothermy. Delivered high mechanical performance, high toughness and low toxicity.



ELIUM® GRADE: 591 / C599 E

Medium viscosity and high reactivity with temperature for maximum productivity. Reinforcements made of Elium® can be bent with temperature after curing.



ELIUM® GRADE: MC590 / MC1590

Medium and high viscosity, thickenable with magnesium oxide. The polymerization can be triggered by temperature up to 115°C for maximum reactivity.



ELIUM® GRADE: C040 / C445

Dedicated for casting applications such as solid surfaces, concrete polymers for various fields of applications: sanitary, industrial, home equipment. Mixed with high filler content: mineral fillers, pigments, colored granules, etc.

Properties

Typical cured non reinforced resin properties*

Property	Units	Value	Standard
Cured Density	g/cm ³	1.178	ISO1183-1
Heat Deflection Temp	°C	78.2	ISO75-2
Transition Glass Temp	°C	97.9	ISO6721-5
Barcol Hardness	-	49	ASTMD2583
Water uptake 7days@23°C	-	0.5%	ISO62
Tensile Strength	MPa	54	ISO527-2
Tensile Modulus	GPa	3	ISO527
Tensile Elongation@break	-	2.5%	ISO527
Flexural Strength	MPa	84	ISO178
Flexural Elongation@max Strength	-	3.1%	ISO178

**Properties are based on Elium® 188 0 series and DNV GL Test Report, resin with 3phr Dibenzoyl Peroxide at room temperature 24h@23°C, postcured 2h@80°.*

Hand or Machine mixing at >15°C room temperature.

Pot life/Gel Time is significantly depending on the ambient temperature and the amount of resin mixed. We recommend ambient temperature of minimum 20°C for best results.

If you need longer or shorter reactivity, please contact Arkema representative.

Visit www.elium-composites.com

Shelf Life: 4 to 6 months when stored in sealed containers, protected from light and at a temperature below 30 °C.

Recommended Materials

Release agent: Acrylic resin type

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

Core Materials: PET / PMI FOAM, X-linked PVC, Balsa wood. Elium® resin is not compatible with SAN, PS, linear PVC, PE and PU.

Glass Fiber: Recommended multicompatible or vinylester sizing.

Carbon fiber: Recommended vinylester or thermoplastic sizing.

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.

Storage and Handling
Read carefully the material safety data sheet (MSDS).

For more information about Elium resin and contacts



Arkema North America

900 First Avenue
King of Prussia, PA 19406
USA
T: +1(0) 610 205 7000

Arkema Asia Pacific

7F, 21 Gukhoe-daero 62-gil,
Yeangdeungpo-gu Seoul
150-874, Korea

Arkema France

420, rue d'Estienne d'Orves
F-92705 Colombes Cedex
T: +33 (0)1 49 00 80 80

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