

Technical Datasheet

INEOS Composites

MAXGUARD™ FR // H/S fire retardant gelcoat

MAXGUARD FR // H/S are halogen free flame retardant gelcoats based on a special formula of resin and mineral fillers. These gelcoats have good resistance to flame and low smoke formation.

Typical liquid gelcoat properties

Property at 23°C	H (Brush)	S (Spray)	Unit	Method
	Value	Value		
Viscosity, Brookfield RV5, 10 rpm	12000	8000	mPas	ISO 2555
Viscosity, cone & plate	900	300	mPas	ISO 2884
Geltime, 2% MEKP-50	12	8	min	ASTM D2471
Density	1,50	1,48	g/cm ³	ISO 2811

Typical gelcoat base resin properties

Property (postcure 24h at 50°C)	Value	Unit	Method
Tensile strength	70	MPa	ISO 527
Tensile modulus	3600	MPa	ISO 527
Elongation at break	3,5	%	ISO 527
Flexural strength	115	MPa	ISO 178
Flexural modulus	3500	MPa	ISO 178
Heat Deflection Temperature	70	°C	ISO 75(A)
Water absorption after 28 days	80	mg/sample	ISO 62
Hardness	42	Barcol	ASTM D2583

Application and use

MAXGUARD FR // H/S halogen free flame retardant gelcoats are suitable for use in a variety of FRP products which require good flame retardant properties. MAXGUARD FR // H/S gelcoats are mainly used in the transportation and building and construction industry.

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To achieve best results the final cured gelcoat thickness should be 300-400 microns.

Note: For more information on application and use of fire retardant gelcoats and resins, please contact INEOS Composites's sales and technical service personal.

Fire retardant properties

Test	Value	Method
Oxygen index	26	ASTM D2863-70
Epiradiator test 1) 2)	M 2	NF P 92-501
Smoke test	F1 1); F2 2)	NF F 16-101
Class of Fire 1)	S 4	DIN 5510-2:2009-05
Smoke test 1)	SR 2	DIN 5510-2:2009-05
Class of Material dropping in fire 1)	ST 2	DIN 5510-2:2009-05
Toxicity, t(zul)=30 min 1)	< 1	DIN 5510-2:2009-05
Toxicity, t(zul)=15 min 1)	< 1	DIN 5510-2:2009-05

1) Structure: Gelcoat MAXGUARD FR with Hetron F 640 TF(E)resin

2) Structure: Gelcoat MAXGUARD FR with Hetron F 240 TF(E)resin

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Certificates and approvals

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 9002, ISO 14001 and OHSAS 18001 by .

Note: The fire retardancy values mentioned above are indicative values, based on material tested in the third party laboratories. These values should not be construed as guaranteed results. A large number of parameters relating to user's laminate design and manufacturing process will impact the fire retardancy (amongst others: part thickness & homogeneity, glass & filler ratio, gelcoat and paint choice, etc.). Optimum fire retardancy can only be obtained on fully cured gelcoat and resin laminate system. The final part in which the resin will be used shall imperatively be tested according to the relevant norms prior to full industrialization, in compliance to laws and regulations in force. It shall be the sole responsibility of the user to determine the suitability of the product for the user's specific application.

Handling and use

For good handling and working practices, see INEOS Composites "Gelcoat Handling Guide". It is highly recommended that all materials are stored at stable temperature under 25 °C preferably indoors, and away from direct sunlight. A high quality methyl ethyl ketone peroxide (MEKP) catalyst should be used between 1.5 - 2.5%. The gelcoat with the catalyst must be gently stirred before taken in use.

The material should be used within 5 months from the date of manufacture. Prolonged storage or storage outside of recommended conditions can influence gelcoat liquid properties like viscosity and gel time and it is recommended to test these properties before starting application.

Notice

All information presented herein is believed to be accurate and reliable, and is solely for the user's consideration, investigation and verification. The information is not to be taken as an express or implied representation or warranty for which INEOS Composites assumes legal responsibility. Any warranties, including warranties of merchantability, fitness for use or non-infringement of intellectual property rights of third parties, are herewith expressly excluded.

Since the user's product formulations, specific use applications and conditions of use are beyond the control of INEOS Composites, INEOS Composites makes no warranty or representation regarding the results which may be obtained by the user. It shall be the sole responsibility of the

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user to determine the suitability of any of the products mentioned for the user's specific application.

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