

# Technical Datasheet

# INEOS Composites

## HETRON™ F 240 TF Flame Retardant Resin

HETRON F 240 TF is a flame retardant polyester resin containing halogens and antimony trioxide. HETRON F 240 TF is thixotropic, white pigmented and non pre-accelerated. HETRON F 240 TF would be expected to achieve a M2 F2 rating when tested to NFP92501 and NFF16101 for the laminate structure in which it has been tested (report and certificate available on request).

### Typical liquid resin properties

Property at 23°C	Value	Unit	Method
Viscosity, Brookfield RV2, 20 rpm	1000	mPas	D 005
Monomer content	28	%	D 003
Density	1,45		QC 16
Geltime	15	min	D 006
+ 1.2 % Co-oct (1%)			
+ 1.5 % MEKP-50			

### Typical cured resin properties

Property	Value	Unit	Method
Tensile strength	35	MPa	ISO 527
Tensile modulus	6000	MPa	ISO 527
Elongation at break	1,0	%	ISO 527
Flexural strength	55	MPa	ISO 178
Heat deflection temperature	75	°C	ISO 75 (A)
Hardness	50	Barcol	ASTM D2583

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**Application and use** HETRON F 240 TF resin can be used in contact moulding, spray-up and cold press applications. It is particularly recommended for finished products which need good flame retardancy and medium smoke toxicity, e.g. construction (sanitary etc.), and transport (trains underground/subway).

### Fire retardant properties (1)

Test	Classification / Value	Method
Oxygen index	32 %	NF EN ISO 4589-2
Epiradiator test (LNE-09/08)	M2	NFP 92-501
Smoke test (LNE- 12/12)	F2	NFF 16-101
Flame test (LNE- 12/01)	V0	UL 94
Flammability test (BRE-05/16)	Class 1	BS 476 part7
Tunnel test (SouthWest Research Institute -2007)	FSI = 20 / SDI = 850	ASTM E-84
Fire testing (Die Bahn-11/04)	S4-SR1-ST2	DIN 5510-2
Euroclass-SBI (SouthWest Research Institute- 2007)	CS3d0	EN 13501-1
Epiradiator test (LNE - 09/11) with Gelcoat Maxguard FR	M2	NF P 92-501
Smoke test (LNE- 12/12) with Gelcoat Maxguard FR	F2	NFF 16-101

(1) Fire retardancy ratings mentioned above are indicative values, based on material tested in 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 fire retardancy (amongst others: part thickness, part homogeneity, glass ratio, filler ratio, gel coat, paint, etc.). Optimum fire retardancy can only be obtained on fully cured resins and laminates.

The final part in which the resin will be used shall imperatively be tested according to relevant norms prior to full industrialization, in compliance with 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.

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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 14001 and OHSAS 18001.
Handling and storage	<p>HETRON F 240 TF resin is delivered in open top drums. The resin must be stirred very well before use.</p> <p>It is highly recommended that all material is stored at stable temperatures under 25°C preferably indoors, and away from direct sunlight. Prolonged storage or storage outside of recommended conditions can influence liquid resin properties like viscosity and geltime. The maximum shelf life of HETRON F 240 TF resin is three (3) months.</p>
Notice	<p>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.</p> <p>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 user to determine the suitability of any of the products mentioned for the user's specific application.</p> <p>INEOS Composites requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.</p>