

CRESTAPOL[®] 1220PA

Introduction

Crestapol 1220PA is a tough, impact resistant, laminating resin which has been designed for high performance applications.

Formulation

Crestapol 1220PA should be allowed to attain workshop temperature (18°C-20°C) before use. It is cured by the addition of 1-2% Catalyst M (Butanox M50) which should be thoroughly incorporated into the resin.

Pot Life

Temperature	Pot Life in Minutes	
	1% Catalyst M	2% Catalyst M
15°C	67	23
20°C	35	17
25°C	25	12

Curing should not be carried out at temperatures below 15°C. The resin, mould, and workshop should all be at, or above this temperature.

Post Curing

Satisfactory laminates for many applications can be made with Crestapol 1220PA by curing at workshop temperature (20°C). However, to achieve optimum performance, laminates should be post-cured before being put into service. The moulding should be allowed to cure for 24 hours at 20°C and then be oven-cured for a minimum of 16 hours at 40°C.

Physical Data – Uncured

The following tables give typical properties of Crestapol 1220PA when tested in accordance with BS2782.

Property	Unit	Liquid Resin
Viscosity at 25°C		Thixotropic
Specific Gravity at 25°C		1.07
Volatile Content	%	45
Stability in The Dark at 20°C	Months	3
Geltime at 25°C Using 2% Catalyst M (Butanox M50)	Minutes	12

Physical Data – Cured

Property	Unit	Fully Cured (Unfilled Casting)	
		16 hours at 40°C	3 hours at 80°C
Tensile Strength	MPa	46	58
Tensile Modulus	GPa	2.7	2.85
Flexural Strength	MPa	91	105
Flexural Modulus	GPa	2.33	2.64
Elongation at Break	%	12	7
Water Absorption 1 day	mg (%)	11 (0.12)	18 (0.20)
7 days	mg (%)	36 (0.39)	48 (0.53)
28 days	mg (%)	60 (0.64)	78 (0.86)
Heat Deflection Temperature Under Load (1.80 MPa)	°C	55	65†

Impact Strength - Notched Izod	J/m	39	38
Impact Strength - Charpy	kJ/m ²	27	21
Barcol Hardness (Model GYZJ 934-1)		26	30
Specific Gravity		1.2	1.2
Volume Shrinkage	%	9..3	9.3

† Curing schedule - 24 hrs at 20°C, 5 hrs at 80°C, 3 hours at 120°C.

		Fully Cured Laminate							
		450 g CSM ¹		800g WR ²		Aramat 72K ³		200g Carbon ⁴	
Property	Unit	Lloyds*	SB**	Lloyds	SB	Lloyds	SB	Lloyds	SB
Tensile Strength	MPa	131	112	296	268	258	255	543	509
Tensile Modulus	GPa	6.76	6.01	19.60	17.19	12.05	12.98	43.39	42.11
Elongation at Break	%	2.6	2.1	2.1	1.6	2.2	2.1	1.4	1.4
Flexural Strength	MPa	206	218	388	408	343	354	375	364
Flexural Modulus	GPa	6.10	6.59	10.68	12.13	10.05	10.68	20.83	24.64
Compressive Strength	MPa	174	145	227	238	166	155	142	149
Compressive Modulus	GPa	6.00	5.04	13.35	13.00	13.15	14.05	33.82	33.48
Impact Strength - Notched Izod	J/m	1419	1409	1473	1318	495	471	714	776
Impact Strength - Charpy	kJ/m ²	117	99	142	140	64	66	54	57
Inter Laminar Shear Strength	MPa	24	24	29	28	20	20	22	21

¹ 4 layers 450 g/m² powder bound chopped strand mat at 33% glass content.

² 4 layers 800 g/m² woven roving at 50% glass content.

³ 4 layers Aramat 72K at 40% reinforcement content.

⁴ 4 layers 200 g/m² plain weave carbon fabric at 50% carbon fabric content.

* Lloyd's post-curing schedule of 24 hours at 20°C, 16 hours at 40°C.

**Scott Bader post-curing schedule of 24 hours at 20°C, 3 hours at 80°C.

Storage

Crestapol 1220PA should be stored under cover in the dark in suitable, closed containers. It is recommended that the storage temperature should be less than 20°C, where practical, but should not exceed 30°C. Ideally, the containers should be opened only immediately prior to use.

Packaging

Crestapol 1220PA is supplied in 25Kg and 200Kg containers.

Health and safety

See separate Material Safety Data Sheet.

Patent

Patent application No. GB 0706309.2 pending.

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