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PS200

Flame Retardant Prepreg

Introduction

PS200 prepreg is a flame retardant resin system with high service temperature designed for heat and flame shielding. Under the action of extreme heat, PS200 can turn into a ceramic-like material. It can be supplied on a variety of fabrics to meet your cost and manufacturing requirements. This resin system colour is dark brown / black.

Typical applications: *Automotive / Electric Vehicles – Flame retardant*

Key Features & Benefits

- Cure temperature from **120°C**
- Service temperature up to **330°C** after post cure*
- Work life at 20°C: **21 days**
- Storage life at -18°C: **12 months**
- Rated **UL94 V0**

**Capable of exposure to higher temperatures – consult SHD for details*

Storage & Out Life

This material should be kept frozen at -18°C for a maximum storage life. If kept refrigerated at 6°C storage life will be reduced to 2 months. It must be kept sealed in a polythene bag which must not be opened until fully thawed to room temperature. If the material is not fully used, then the material must be resealed in the polythene bag to prevent moisture absorption.

Issued 18th September 2018

Note: The information and assistance provided herein is for your consideration without legal responsibility. Users are required to perform verification and testing to confirm that the product meets with their requirements.



Cure Cycles & Service Temperatures

Cure		Post cure		Service Temperature	Tg – E' Onset	Tg – tan δ Peak
120°C	90 min	-	-	120°C	125°C	170°C
130°C	1 hour	-	-	150°C	160°C	200°C
130°C	1 hour	200°C	2 hours	250°C	270°C	325°C
130°C	1 hour	300°C	2 hours	330°C	350°C	390°C

Recommended cures:

- **Autoclave / Oven cure**
 - **130°C for 1h**, at a ramp rate of **2-3°C/min**
 - P3 Release film recommended
- **Press cure**
 - **130°C for 1h**, at a ramp rate of **2-3°C/min**
 - Cool down below **90°C** before opening the press

The cures given are as a guide only, and will be subject to changes in part geometry and construction.

Please contact SHD for further details.

Notes:

- Due to the chemical nature of this material, water is evolved during the cure. If press curing the press may need to be vented during the cure for best results. If curing under vacuum, it is recommended that a water trap is placed in the vacuum line to prevent damage to vacuum pump oil.
- For autoclave cure, the maximum pressure that can be applied will vary depending on the curing temperature. Consult our technical team for more information.

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Flame propagation

UL94 vertical burn rating: **V0**

Material tested: 8x PS200 – G300 (7781) – 33%RW prepreg
 Cured 1h@130°C

UL94 conditions and ratings

Conditions	V - 0	V - 1	V - 2
Afterflame time for each individual specimen A or B	≤ 10 s	≤ 30 s	≤ 30 s
Total afterflame time for any condition set (A+B) for 5 specimens	≤ 50 s	≤ 250 s	≤ 250 s
Afterflame plus afterglow time for each individual specimen after the second flame application (B+C)	≤ 30 s	≤ 60 s	≤ 60 s
Afterflame or afterglow of any specimen up to the holding clamp	NO	NO	NO
Cotton indicator ignited by flaming particles or drops	NO	NO	YES

Test results

MT/GM/2642	PS200 2mm laminate material				
Specimen No.	A	B	C	D	E
1	2.0	8.2	Nil	No	No
2	2.0	5.1	Nil	No	No
3	2.5	8.1	Nil	No	No
4	2.0	6.2	Nil	No	No
5	2.0	8.8	Nil	No	No

23°C conditioned

MT/GM/2642	PS200 2mm laminate material				
Specimen No.	A	B	C	D	E
1	2.0	4.1	Nil	No	No
2	2.60	3.0	Nil	No	No
3	2.90	8.0	Nil	No	No
4	2.70	5.0	Nil	No	No
5	2.10	5.2	Nil	No	No

70°C conditioned

Tests completed independently by a UKAS approved organisation. Tests results can be supplied upon request.

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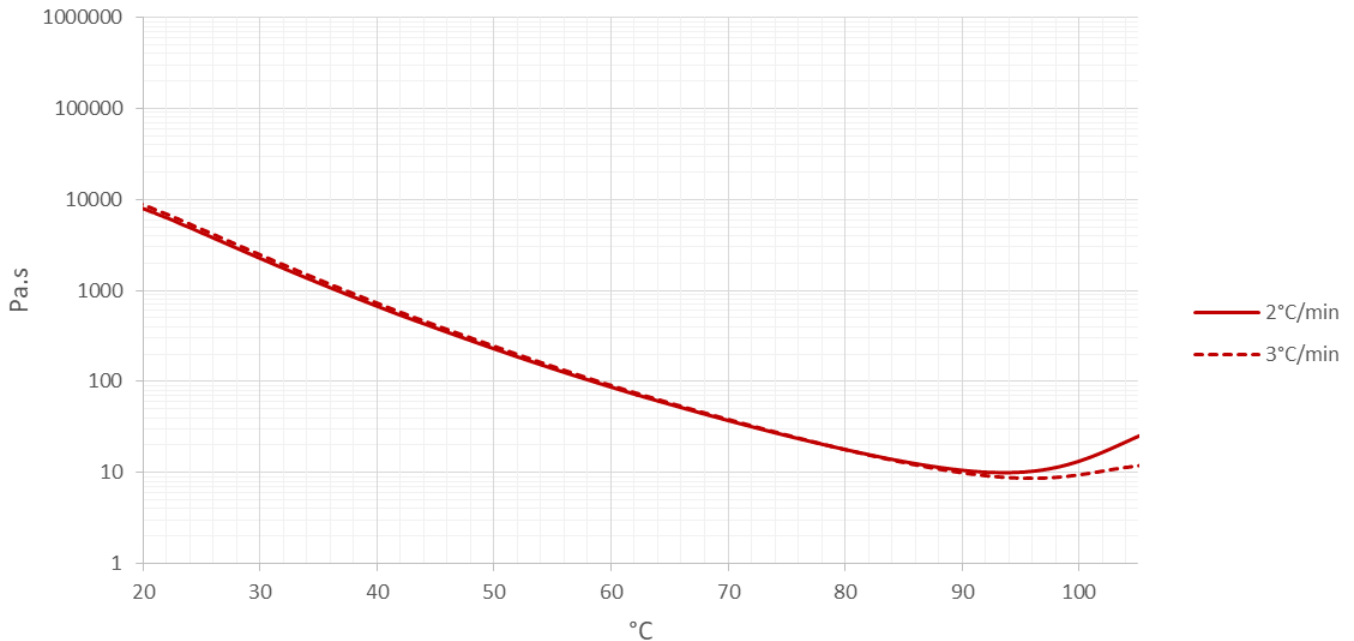
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Viscosity Profile

Testing carried out at $23\pm 2^{\circ}\text{C}$, $50\pm 5\%$ RH.



Health and Safety

Please refer to the product Safety Data Sheet before using this material. The following precautions must be taken when using PFA resin prepregs:

- Impervious gloves are recommended.
- To avoid exotherm, particular care must be taken with thick laminates.
- Ramp rates must not exceed $3.0^{\circ}\text{C}/\text{min}$ during initial cure and $1.0^{\circ}\text{C}/\text{min}$ during post cure.

SHD Composite Materials Ltd cannot accept any liability for injury or damage where the above precautions have not been taken or where the material is used for any purpose other than its intended use.

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