CYCOM® 7668 Epoxy Resin

Description:

CYCOM® 7668 resin is a 350°F (177°C) curing flame retarded epoxy formulated for use with fiberglass in structural laminates and sandwich panels for aircraft exteriors. Woven fabric impregnated with 7668 resin will maintain good tack and drape for at least 15 days at 75°F (24°C) and once cured, exhibits excellent resistance to thermal aging.

For more information, contact:
Cytec Engineered Materials
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Anaheim, California 92806
714 630-9400

Features and benefits:

- **Four tailored tack levels**
- **Excellent flammability**
- **Resistant to thermal aging**
- **Outstanding tension, compression and sandwich properties**
- **Suitable for laminates and sandwich panels**
- **Low flow and core movement**
- **Meets BMS-8-139 and MIL-R-9300, type 2**
- **350°F (177°C) cure**
- **350°F (177°C) dry service temperature**
- **Shelf life**
- **6 months at 0°F (-18°C)**
- **Out life 15 days at 75°F (24°C)**

This information is provided for informational purposes only and without legal responsibility.
Users are expected to perform adequate verification and testing to ensure that materials meet required specifications.

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Tailored tack levels

CYCOM® 7668 is available in four different tack levels ranging from high tack to very low tack. Tack is primarily controlled via resin formulation, i.e., manufacturing conditions and tolerances are identical across the four tack levels. Also, there are no differences in mechanical and flammability characteristics between the different tack ratios.

Lay-up and cure

See Section VI for recommended lay-up/bagging procedures. Refer to L-6 for laminates and L-9 for sandwich panels. Film adhesive is required when fabricating sandwich panels. The recommended cure cycle is as follows:

- Heat at 2 - 5°F/min up to 190°F under vacuum and 15psig autoclave pressure
- Hold at 190°F for 30 minutes
- Increase autoclave pressure to 45psig and ramp to 350°F at 2 - 5°F/min
- Hold at 350°F for 90 minutes
- Cool under pressure to 140°F at 5°F/min maximum

Typical prepreg properties

	STYLE 7781	STYLE 120
Resin content, %	36±2	42±3
Volatile content, %	1.5 max.	1.5 max.
Flow, %	17± 5	17 ± 5

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TECHNICAL DATA SHEET

Typical properties

MXB 7668 - Style 120 data summary

Mechanical properties	Medium tack
Tensile strength, ksi	
RT	60
350ºF	52
100 hours aging at 350ºF	54
Tensile modulus, Msi	
RT	3.2
350ºF	2.8
100 hours aging at 350ºF	2.9
Compression strength, ksi	
RT	79
350ºF	52
100 hours aging at 350ºF	48
Compression modulus, Msi	
RT	3.4
350ºF	3.3
100 hours aging at 350ºF	3.1
Long beam flex, FM 355 adhesive	
Strength, lb.	207
P/Y, lbs./in.	172
Long beam flex, AF 131 adhesive	
Strength, lb.	212
P/Y, lbs./in.	187
Climbing drum peel, FM 335	
in-lbs/3 in width	25.6
Climbing drum peel, AF 131	
in-lbs/3 in width	12.4
Flammability	
60 sec, vertical	0/1.1/0
(Extinguishing time burn length, drip extinguishing)	
30 sec, 45º	0/0/0
(Extinguishing time, flame penetration, afterglow)	
Monsanto Aviation	
Hydraulic fluid immersion	Pass

1. Avg. test value reported based on actual specimen thickness

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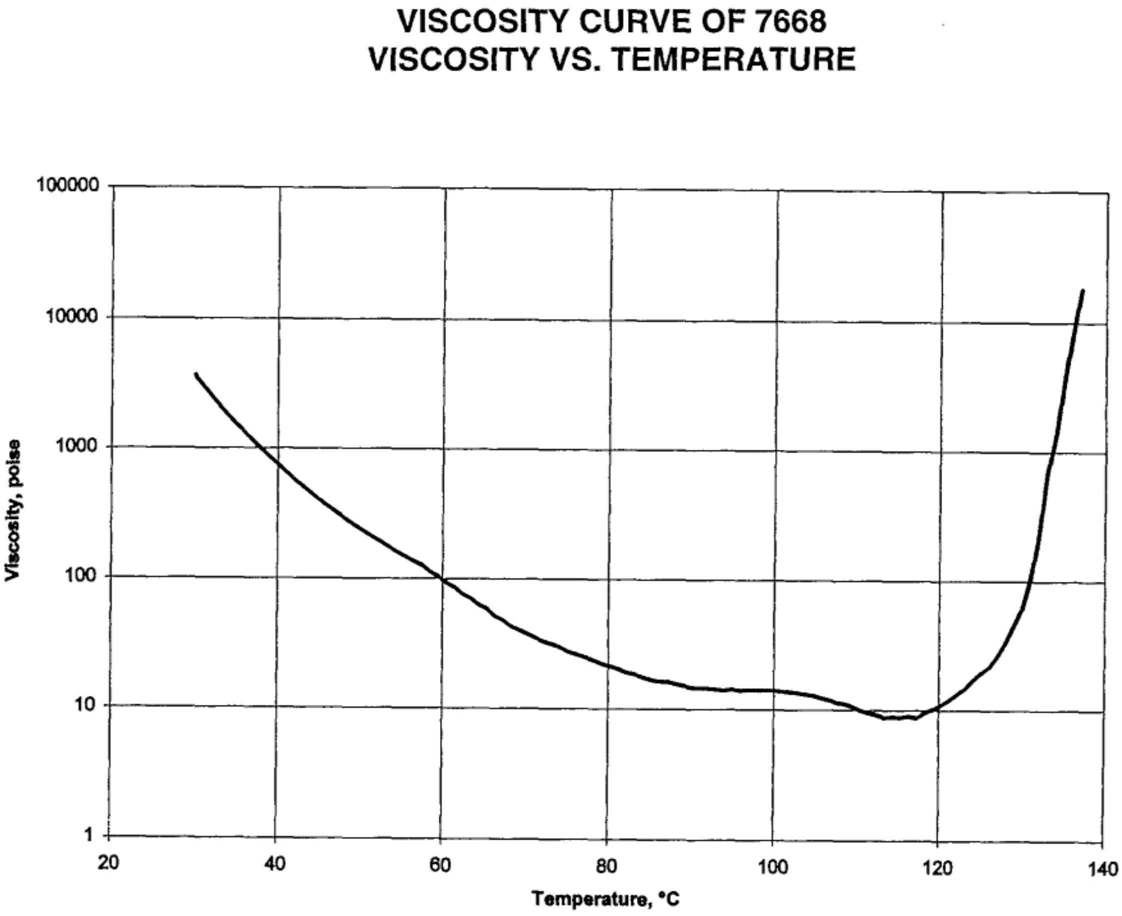
Viscosity curve



TECHNICAL DATASHEET

MXB 7668/7781 Data summary

Mechanical Properties	High tack	Medium tack	Low tack	Very low tack
Tensile strength, ksi				
RT	74	75	74	73
350ºF	61	64	62	60
100 hours aging at 350ºF	63	67	62	63
Tensile modulus, Msi				
RT	3.8	3.9	3.8	3.8
350ºF	3.5	3.6	3.5	3.4
100 hours aging at 350ºF	3.5	3.8	3.5	3.4
Compression strength, ksi				
RT	75	83	80	83
350ºF	53	57	51	53
100 hours aging at 350ºF	57	52	52	59
Compression modulus, Msi				
RT	4	4.2	4.3	4.1
350ºF	3.7	3.8	3.8	3.7
100 hours aging at 350ºF	3.8	4.2	3.9	3.8
Long beam flexural, FM 355 adhesive				
Strength, lb	350	320	359	298
P/Y,lb/in	253	250	246	245
Long beam flexural, AF 131 adhesive				
Strength,lb	364	344	361	345
P/Y, lbs/in	265	269	270	270
Long beam flexural, FM 61 adhesive				
Strength, lb	334	335	346	336
P/Y, lbs/in	235	235	245	250
Climbing drum peel, FM 335				
in-lbs/3 in width	14.3	16.6	15.6	14.1
Climbing drum peel, AF 131				
in-lbs/3 in width	13.7	13.4	13.9	13.4
Climbing drum peel, FM 61				
in-lbs/3 in width	35.3	36.5	36.3	41.0
Flammability				
60 Sec, vertical	0/1.2/0	0/1.0/0	Not tested	0/1.3/0
(Extinguishing time burn length, drip extinguishing)				
30 Sec, 45º	0/0/0	0/0/0	Not tested	0/0.3/0
(Extinguishing time, flame penetration, afterglow)				
Monsanto Aviation				
Hydraulic fluid immersion	Pass	Pass	Pass	Pass

1. Avg. test value reported based on actual specimen thickness
2. Testing per Boeing BMS 8-139 Rev. H

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TECHNICAL DATA SHEET

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Warning

The data listed has been obtained from carefully controlled samples considered to be representative of the product described. Because the properties of this product can be significantly affected by the fabrication and testing techniques employed, and since Cytec Engineered Materials does not control the conditions under which its products are tested and used, Cytec Engineered Materials cannot guarantee that the properties listed will be obtained with other processes and equipment.

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