954-3A

350°F (177°C) curing cyanate matrix

Product Data

Features

- Low moisture absorption
- Controlled flow
- Good dimensional stability
- 350ºF (177ºC) cure
- Available in a broad range of reinforcements for both tapes and fabrics
- Good microcracking resistance
- Low outgassing

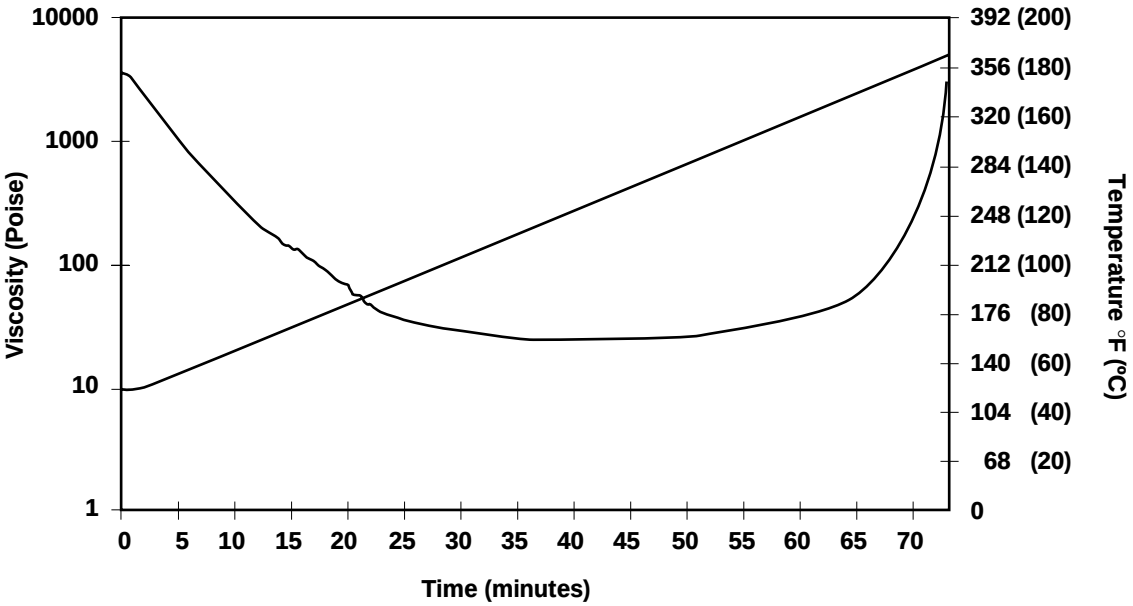
Description

954-3A is a 350ºF (177ºC) curing cyanate resin with a 400ºF (204ºC) glass transition temperature. Standard cure is two hours at 350ºF (177ºC). Glass transition temperatures can be maximized by a free-standing post cure at 450ºF (232ºC). 954-3A is a controlled flow cyanate resin designed for autoclave and vacuum bag curing. 954-3A can be impregnated on all available fibers and fabrics. The recommended lay-up procedure for 954-3A is HSP-L3. The recommended cure procedure is HSP-C1.

Typical applications for 954-3A are primary and secondary space structures where dimensional stability and low moisture absorption are required.

Properties		**RT**
Tensile Strength,	**ksi**	8.0
	MPa	*56*
Tensile Modulus,	**Msi**	0.47
	GPa	*3.3*
Tensile Ult. Strain,	**%**	1.9
Flexural Strength,	**ksi**	12.6
	MPa	*88*
Flexural Modulus,	**Msi**	0.46
	GPa	*3.2*
Tg (DTMA),	**ºC**	197
Density,	**g/cc**	1.19

954-3A Viscosity Profile



Thermal Cycle Evaluation

Materials	0 Cycles # cracks/in.	10 Cycles # cracks/in.	50 Cycles # cracks/in.	100 Cycles # cracks/in.
954-3A/M55J, 0º	0	0	0	0
954-3A/M55J, 90º	<1	<1	<1	<1

Notes: Laminate configuration is $(45, -45, 0, 90)_{4S}$
Thermal cycle: -250ºF (-157°C) to 250ºF (121°C) at 20ºF/min, 5 minutes hold.

Typical 954-3A Outlife Data

Properties	Day 1	Day 7	Day 14	Day 21
Tack	IV	III	III	III
Drape	pass	pass	pass	pass
Flow, %	14.2	13.8	15.1	12.8
SBS, ksi	10.1	10.6	10.8	10.8
Tg, ºC	199	199	195	196

Typical Mechanical Properties

Properties		Fibers (Average Value)	
		M55J	**M60J**
0 Tensile Strength,	**ksi**	294	308
	MPa	*2027*	*2120*
0 Tensile Modulus,	**Msi**	46.8	56.7
	GPa	*323*	*391*
0 Comp. Strength,	**ksi**	130	120
	MPa	*896*	*827*
0 Comp. Modulus,	**Msi**	43.8	48.3
	GPa	*302*	*333*
In-Plane Shear Strength,	**ksi**	6.9	6.5
	MPa	*48*	*45*
In-Plane Shear Modulus,	**Msi**	0.53	0.54
	GPa	*3.7*	*3.7*
0 Flexure Strength,	**ksi**	135	125
	MPa	*928*	*858*
0 Flexure Modulus,	**ksi**	38.1	39.7
	GPa	*263*	*274*

Notes: 0 degree tensile and compression values are normalized to 60% fiber volume.
All testing performed at RT.

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For technical assistance, applications and procedures, or further information, please contact:

Administrative Office and Customer Service Center
5794 West Las Positas Blvd.
P.O. Box 8181
Pleasanton, CA 94588-8781
Tel (925) 847-9500
Fax (925) 734-9676

Hexcel Composites
Duxford, Cambridge CB2 4QD
United Kingdom
Tel 44 (0) 1223 833141
Fax 44 (0) 1223 838808

Sales Offices
2350 Airport Fwy., Suite 550
Bedford, TX 76022-6027
Tel (817) 315-3939
Fax (817) 571-8629

Sales Offices (continued)
101 East Ridge Drive, Suite 102
Danbury, CT 06810-4140
Tel (203) 798-8311
Fax (203) 798-8161

11410 Northeast 122nd Way, Suite 320
Kirkland, WA 98034-6927
Tel (425) 821-7411
Fax (425) 823-6437

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