

FUJIPOLY Data Sheet

Sheet CF400A

Extremely Compressible Carbon Fiber Gap Filler Type

FEATURES

Highly Conformable, Ultra High Thermally conductive gap filler material

CF400A is Ultra high thermally conductive and non-flammable thermal interface gap filler material. Incorporating carbon fiber oriented in the thickness direction, This is very soft conforming thermal gap filler exhibits excellent thermal performance for wide gap application between heat source and heat sink.

CONSTRUCTION

Series	Characteristics	Constructions
Sheet CF400A	Sheet CF400A features double sticky surfaces and ultra high Thermal Conductivity at 40W/m-K based on ASTM D5470.	 Plain Type

TYPICAL PROPERTIES

Properties		unit	CF400A	Test method	Specimen
Physical Properties	Color	-	Black	Visual	-
	Specific Gravity	-	2.4	JIS K6220	A
	Hardness* ¹	Shore OO	67	ASTM D2240	B
Electrical	Volume Resistivity	Ω・cm	26	ASTM D991	C
Thermal Properties	Thermal Conductivity* ²	W/m・K	40	ASTM D5470	-
	Useful Temperature	°F	-40 to +302	-	-
	Low molecular Siloxane	wt%	D ₃ ~ D ₁₀ 0.0300 or less	Gas Chromatography	-
	Flame Retardant	-	V-0 Equivalent	UL 94	-

Specimen A : 2mmT Specimen B : 25mmW x 50mmL x 12mmT Specimen C : 60mmW x 127mmL x 1mmT

*1 : Measured after piling up 2mmT sheets and weighting 500g in 24 hours *2 : Measured under 10% compression rate

THERMAL RESISTANCE

Sheet CF400A

Unit : K-cm²/W (K-in²/W)

Compression Ratio	1.0mmT	1.5mmT	2.0mmT	2.5mmT
10%	0.29 (0.04)	0.44 (0.07)	0.49 (0.08)	0.63 (0.10)
20%	0.29 (0.04)	0.45 (0.07)	0.48 (0.07)	0.61 (0.09)
30%	0.30 (0.05)	0.46 (0.07)	0.49 (0.08)	0.62 (0.10)
40%	0.31 (0.05)	0.47 (0.07)	0.51 (0.08)	0.65 (0.10)
50%	0.32 (0.05)	0.50 (0.08)	0.55 (0.09)	0.70 (0.11)

Test method : Measured by ASTM D5470 equivalent

Test equipment : TIMtester1400 Specimen Area : DIA. 33.0mm

COMPRESSION FORCE

Sheet CF400A

Unit : N/6.4cm² (psi)

Compression Ratio	1.0mmT	1.5mmT	2.0mmT	2.5mmT
10%	159 (36.02)	168 (38.06)	152 (34.44)	84 (19.03)
20%	429 (97.20)	272 (61.63)	224 (50.75)	144 (32.63)
30%	552 (125.06)	335 (75.90)	279 (63.21)	188 (42.59)
40%	661 (149.76)	413 (93.57)	346 (78.39)	238 (53.92)
50%	796 (180.34)	517 (117.13)	438 (99.23)	308 (69.78)
50% after 1min	219 (49.62)	127 (28.77)	118 (26.73)	78 (17.67)

Test method : Measured by ASTM D575-91 for reference

Specimen Area : DIA. 28.6mm Platen Area : DIA. 28.6mm

Compression Velocity : 5.0mm/minute

DURABILITY

Unit : K-cm²/W

Test Property	Compression Ratio	70°C					Compression Ratio	150°C				
		Initial	100hrs	250hrs	500hrs	1,000hrs		Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	20%	0.51	0.51	0.52	0.50	0.52	20%	0.51	0.49	0.49	0.50	0.52
	50%	0.71	0.71	0.71	0.68	0.68	30%	0.55	0.53	0.54	0.59	0.61

Test Property	Compression Ratio	60°C/95%RH					85°C/85%RH				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	20%	0.55	0.53	0.54	0.54	0.54	0.54	0.53	0.52	0.52	0.52
	50%	0.64	0.66	0.64	0.64	0.65	0.64	0.65	0.60	0.60	0.61

Test Property	Compression Ratio	-40°C					-40°C(30min)⇄+125°C(30min)				
		Initial	100hrs	250hrs	500hrs	1,000hrs	Initial	100hrs	250hrs	500hrs	1,000hrs
Thermal Resistance	20%	0.51	0.53	0.54	0.56	0.57	0.52	0.53	0.53	0.53	0.51
	50%	0.67	0.70	0.70	0.71	0.73	0.64	0.69	0.67	0.64	0.63

- Thermal Resistance ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.
Sample size : 10x10x2mmT N=3 Average
(Specimen is sandwiched between aluminum blocks.)

Series	Thickness	Sheet size
Sheet CF400A	1.0mm ±0.15mm	70mmx130mm (Recommended Usable Size:60mm×120mm)
	1.5mm ±0.20mm	
	2.0mm ±0.20mm	
	2.5mm ±0.20mm	

HANDLING NOTES

- Recommendable maximum compression ratio : 30%
- It is recommended to compress the material with the equal ratio on the whole surface. Partial excessive stress may also result in excessive silicone oil exudation.

WARRANTY STATEMENT

- Fujipoly has been utilizing Hot Disk method and TIM Tester method since Fujipoly defined them as Fujipoly standard.
- Properties of the products may be revised due to some changes for improving performance.
- Properties values in this document are not specification or guaranteed.
- This product is made of silicone, and silicone oil may exude from the product.
- This product is made of silicone, and low molecular siloxane may vaporize depending on operating conditions.
- The product is designed, developed, and manufactured for general industrial use only. Never use for medical, surgical, and/or relating purposes. Never use for the purpose of implantation and/or other purposes by which a part of or whole product remains in human body.
- Before using, a safety must be evaluated and verified by the purchaser.
- Contents described in the document do not guarantee the performances and qualities required for the purchaser's specific purposes. The purchaser is responsible for pre-testing the product under the purchaser's specific conditions and for verifying the expected performances.
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