

# HITHERM™ Thermal Interface Materials

## TECHNICAL DATA SHEET 318

### Product Overview

eGRAF® HITHERM™ thermal interface materials are designed for use in applications requiring low contact resistance and high thermal conductivity. The flexible graphite materials can be die-cut and/or laminated with plastics and adhesives.

### Part Designation

Every eGRAF® HITHERM™ thermal interface part number defines the grade and coating options of the material and is constructed based on the following example:

### Product Series Characteristics<sup>[1]</sup>

CHARACTERISTIC	UNIT	PURE GRAPHITE HT-1200 Series	POLYMER ENHANCED HT-2500 Series
Thermal Impedance @ 200 kPa	K-cm <sup>2</sup> /W	HT-1205 = 0.59 HT-1210 = 0.66	HT-2505 = 0.41 HT-2510 = 0.58
Thermal Impedance @ 700 kPa	K-cm <sup>2</sup> /W	HT-1205 = 0.30 HT-1210 = 0.40	HT-2505 = 0.24 HT-2510 = 0.41
Typical Thermal Conductivity <sup>[2]</sup> @ 700 kPa Through-Plane • In-Plane	W/m-K	10 • 150	16 • 120
Typical Thickness with Tolerance			
0.127 mm (0.005") ± 10%	-	HT-1205	HT-2505
0.25 mm (0.010") ± 5%	-	HT-1210	HT-2510
0.51 mm (0.020") ± 5%	-	HT-1220	-
Electrical Resistivity <sup>[3]</sup> In-Plane • Through Thickness	μΩm	60 • 1230	80 • 1550
Hardness (Shore A)			85
Coefficient of Thermal Expansion (CTE) In Plane • Through-Plane	ppm/°C		-0.4 • 27.0
Flammability Rating	UL		94V-0
Operating Temperature	°C	-40 to +400	-25 to +125
Specific Heat @ 25°C	J/g-°C		0.71
RoHS Compliant	-		Yes
Lead / Halogen Free	-		Yes

THERMAL INTERFACE MATERIAL		
HT	—	12 10
Product Name	Series Name	Typical Graphite Thickness (thousands of an inch)

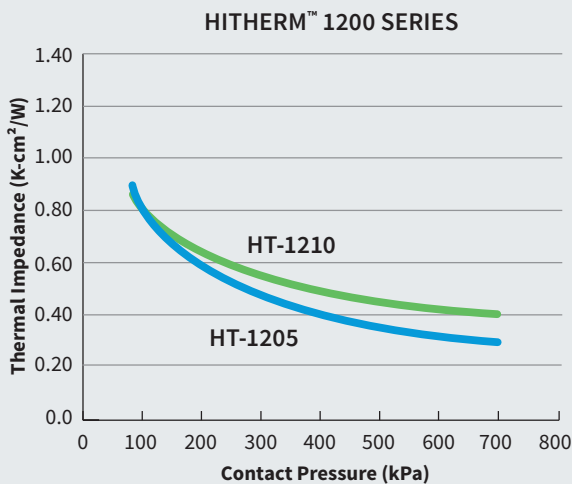
OPTIONAL COATING
A
Adhesive

## HITHERM™ Thermal Interface Materials - Adhesive Coating Option

CHARACTERISTIC	ADHESIVE “A” COATING*
Nominal Thickness (mm • inches)	0.008 • 0.0003
Operating Temperature (°C)	-40 to +150
Thermal Impedance <sup>[4]</sup> per Side (cm <sup>2</sup> °C/W @ 110 kPa)	0.16
Thermal Conductivity (W/m-K)	-
Dielectric Strength (V)	-
Adhesive Strength <sup>[5]</sup> (g/cm <sup>2</sup> )	700 Typical 450 Minimum

\*Adhesive not available on HT-1220 Grade

### Thermal Impedance vs. Interface Pressure



Notes:

- [1] Properties listed are typical and cannot be used as accept/reject specifications.
- [2] In-Plane conductivity at ambient temperature determined using Angstrom’s Method. Through-plane conductivity determined using ASTM D5470 Modified Method.
- [3] ASTM C611.4 Point Resistivity Test.
- [4] ASTM D5470 Modified (at 110kPa/16 psi/1.1 bar). Total thermal impedance = thermal impedance of graphite + thermal impedance of coating.
- [5] Adhesive Strength is based on a lap shear test (ASTM D3163) with material adhering to a glass plate.

+1 (800) 253.8003 (Toll-Free in USA) | +1 (216) 529.3777 (International)  
[www.neograf.com](http://www.neograf.com) | [info@neograf.com](mailto:info@neograf.com)

©2018 NeoGraf Solutions, LLC (NGS). This information is based on data believed to be reliable, but NGS makes no warranties, express or implied, as to its accuracy and assumes no liability arising out of its use. The data listed falls within the normal range of product properties, but should not be used to establish specification limits or used alone as the basis of design. NGS’s liability to purchasers is expressly limited to the terms and conditions of sale. eGRAF®, GRAFGUARD® and GRAFOIL® are registered trademarks of NeoGraf Solutions, LLC. eGRAF®, GRAFGUARD® and GRAFOIL® products, materials, and processes are covered by several US and foreign patents. For patent information visit [www.neograf.com](http://www.neograf.com).