RockeTape[™] Heat Resistant Thermal Tape

RT-AZ Graphite

Product Description

RT-AZ GR consists of a 165 micron (6.5 mil) AeroZero® polyimide aerogel film with a 50.8 micron (2 mil) external graphite film joined with a 25.4 micron (1 mil) adhesive. The adhesive is a high-performance engineering grade silicone pressure sensitive adhesive (PSA) with a release layer that is peeled off before application to a substrate. Potential substrates include stainless steel, aluminum, glass, carbon fiber, and polymer substrates such as polyimides, polyether ketones, polyurethanes, and polyesters. Typical use is thermal barrier/protection of parts in the Aerospace, Defense and Electronic industries.

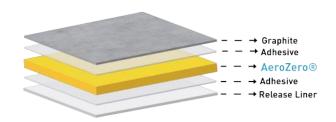
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Applications

Prior to peeling the release liner from the adhesive, ensure the substrate is clean and free of loose particles. Standard application temperature is 25 °C (77 °F) and the recommended set time for optimal adhesion is three days prior to testing. The minimum application temperature is 10 °C (50 °F) and minimum set time is 24 hours before performing any tests. Increasing temperature and dwell time may increase adhesion strength.

Features

- Ultra-thin thermal protection system (TPS)
- Excellent thermal insulator and heat spreader
- ◊ Lightweight
- Easy application with permanent bonding
- ♦ Flame retardant
- High heat resistance > 1000 °F (538 °C)



Uses

- Launch vehicle protection
- ♦ Supersonic munition and aircraft
- High performance race cars and boats

Standard Dimensions

 Standard Roll: 25 mm wide x 7.6 m long (1 in x 25 ft)

Storage

- Recommended Storage Conditions:
- ♦ Temperature: below 25 °C (77 °F)
- ♦ Relative Humidity: below 50%





Lighten. Protect. Perform.

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RT-AZ Graphite Data

Physical and Mechanical Properties	Method	Value
Product Code		5020-1151-251
Thickness, µm (mil)	In-House Method	267 ± 38 (10.5 ± 1.5)
Tensile Strength, MPa (ksi)	ASTM D882-12	4.5 ± 0.5 (0.65 ± 0.07)
Young's Modulus, MPa (ksi)	ASTM D882-12	415 ± 40 (60 ± 5.8)
Tensile Elongation at Break, %	ASTM D882-12	4 ± 1
Density, g/cm ³	In-House Method	0.70 ± 0.05
Thermal Properties	Method	Value
Thermal Conductivity (25 °C), W/m•K	ASTM C518-10	0.053 ± 0.005
Specific Heat Capacity (25 °C), J/g•°C	ASTM C1784-20	1.07 ± 0.05
IR Emissivity (Polyimide Surface)	ASTM E408-13	0.85
Thermomechanical Properties	Method	Value
Glass Transition Temp (AZ T _g , DMA), °C (°F)	ASTM E1640-13	305 (580)
Decomposition Temp (10 wt% loss, TGA), °C (°F)	ASTM 2550-17	470 (878)
Additional Properties	Method	Value
Adhesive Strength:		
180 °peel/3 day-RT dwell time AZ film on 50.8 micron (2-mil) AI Foil (lb/in)	ASTM D3330	>300 (1.7)
UL Flammability Rating	UL94 VTM0	VTM-0

Data within this table are typical values for the graphite product family. *Product Code # 5020-1151-251*

Graphite: 50.8 micron (2 mil)
Gilicone Adhesive (PSA): 25.4 micron (1 mil)
AeroZero (AZ): 165 micron (6.5 mil)
Silicone Adhesive (PSA): 25.4 micron (1 mil)



Blueshift products are manufactured under a certified AS 9100D/ ISO 9001:2015 Quality Management System facility. See our website for more information on Blueshift products.

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