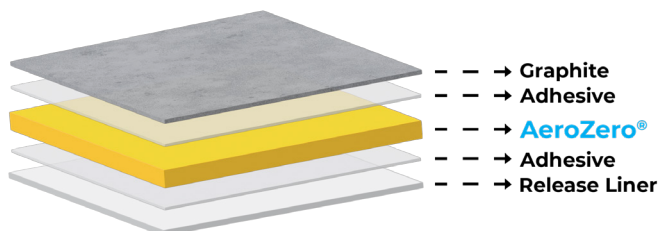




## AeroZero® Heat Resistant Thermal Tape AZ-GR Tape

### Product Description

AZ-GR Tape 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.



### 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%

### Application

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)



*Lighten. Protect. Perform.*



### AeroZero® Heat Resistant Thermal Tape AZ-GR Tape

Physical and Mechanical Properties	Method	Value
Product Code	-	5020-11S1-251
Thickness, µm (mil)	In-House Method	267 (10.5)
Tensile Strength, MPa (ksi)	ASTM D882-12	4.5 (0.65)
Young's Modulus, MPa (ksi)	ASTM D882-12	415 (60)
Tensile Elongation at Break, %	ASTM D882-12	4
Density, g/cm <sup>3</sup>	In-House Method	0.70

Thermal Properties	Method	Value
Thermal Conductivity (25 °C), W/m·K	ASTM C518-10	0.053
Specific Heat Capacity (25 °C), J/g·°C	ASTM C1784-20	1.07
IR Emissivity (Polyimide Surface)	ASTM E408-13	0.85

Thermomechanical Properties	Method	Value
Glass Transition Temp (AZ T <sub>g</sub> , 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) Al Foil N/m (lb/in)	ASTM D3330	>300 (1.7)
UL Flammability Rating	UL94 VTM0	VTM-0

Data within this table are typical values for the AeroZero® graphite TPS product family.  
Product Code # 5020-11S1-251



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.