



## AeroZero® Thermal Tape AZ-Tape

### Product Description

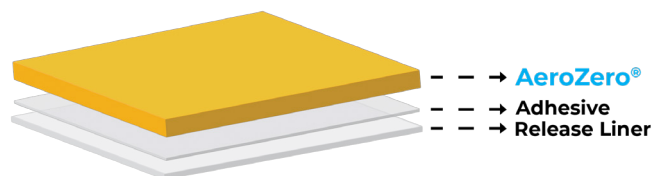
AeroZero® Tape consists of a 165 micron (6.5 mil) AeroZero® polyimide aerogel film with a 25.4 micron (1 mil) adhesive applied onto one side. The adhesive is a high-performance engineering grade silicone pressure sensitive adhesive (PSA) with a release layer that is peeled off before application onto a substrate. Potential substrates include stainless steel, aluminum, glass, and polymer substrates such as polyimides, polyether ketones, polyurethanes, and polyesters. Typical use is thermal barrier/insulation of parts in the Aerospace, Defense and Electronic industries.

### Application

Prior to peeling the release liner from the adhesive, ensure the surface is clean and free of loose particles. Standard application temperature is 25 °C (77 °F) and the recommended set time for optimal adhesion is 3 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)
- ◇ Flexible application onto complex parts
- ◇ Enhanced thermal performance of substrates
- ◇ Easy application with permanent bonding
- ◇ Flame retardant
- ◇ Lightweight



### 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%





### AeroZero® Thermal Tape AZ-Tape

Physical and Mechanical Properties	Method	Value
Product Code	-	5000-01S1-251
Thickness, $\mu\text{m}$ (mil)	In-House Method	190 (7.5)
Tensile Strength, MPa (ksi)	ASTM D882-12	7.2 (1.0)
Young's Modulus, MPa (ksi)	ASTM D882-12	250 (36)
Tensile Elongation at Break, %	ASTM D882-12	6
Density, $\text{g}/\text{cm}^3$	In-House Method	0.38
Thermal Properties	Method	Value
Thermal Conductivity (25 °C), $\text{W}/\text{m}\cdot\text{K}$	ASTM C518-21	0.038
Specific Heat Capacity (25 °C), $\text{J}/\text{g}\cdot^\circ\text{C}$	ASTM C1784-20	1.08
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	410 (770)
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 (Lbf/in)	ASTM D3330	>300 (1.7)
UL Flammability Rating	UL94 VTM0	VTM-0
Adhesive Type:	-	Silicone

Data within this table are typical values for the AeroZero® TPS product family.  
Product Code #5000-01S1-251

#### AZ-Tape

