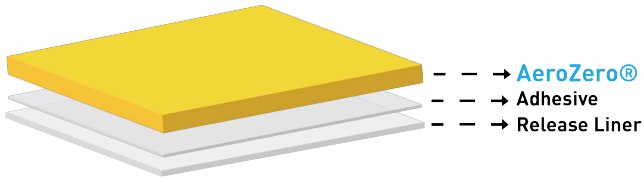
BLUESHIFT

PRODUCT DATA SHEET

AeroZero® Thermal Protection Systems
AZ-TPS

Product Description

AZ-TPS consists of a 165 micron (6.5 mil) AeroZero® polyimide aerogel film with a 25.4 micron (1 mil) adhesive applied onto a single 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.



Applications

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
- ◊ Enhances thermal performance of substrates
- ◊ Easy application with permanent bonding
- ◊ Flame retardant
- ◊ Lightweight

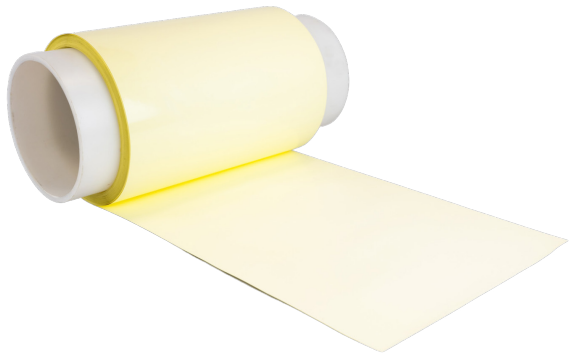
Standard Dimensions

- ◊ Test Sample: 216 x 356 mm (8.5 x 11 in)
- ◊ Sample Roll: 1 x 3.05 m (1 x 10 ft)
- ◊ Standard Roll: 1 x 30.5 m (1 x 100 ft)

Storage

Recommended Storage Conditions:

- ◊ Temperature: below 25 °C (77 °F)
- ◊ Relative Humidity: below 50%



Lighten. Protect. Perform.

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AeroZero® Thermal Protection Systems

AZ-TPS Data

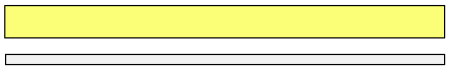
Physical and Mechanical Properties	Method	Value
Product Code	-	2000-01S1-000
Thickness, µm (mil)	In-House Method	190 ± 38 (7.5 ± 1.5)
Tensile Strength, MPa (ksi)	ASTM D882-12	7.2 ± 1.5 (1.0 ± 0.3)
Young's Modulus, MPa (ksi)	ASTM D882-12	250 ± 75 (36 ± 11)
Tensile Elongation at Break, %	ASTM D882-12	6 ± 2
Density, g/cm^3	In-House Method	0.38 ± 0.05

Thermal Properties	Method	Value
Thermal Conductivity (25 °C), W/m•K	ASTM C518-21	0.038 ± 0.003
Specific Heat Capacity (25 °C), J/g•°C	ASTM C1784-20	1.08 ± 0.06

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/AeroZero on 2-mil Al Foil (lb/in)	ASTM D3330	>300 (1.7)
UL Flammability Rating	UL94 VTM0	VTM-0

Data within this table are typical values for the standard AZ-TPS product family.
Product Code # 2000-01S1-000



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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