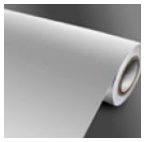
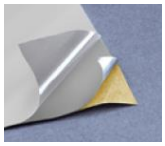
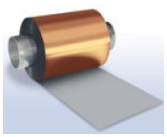
ACKTAR WHITE™

1. Main Features

Acktar White™ space qualified films deliver a range of emissivity and solar absorptivity values for passive thermal management in space applications. These types of coatings are often used in multi-layer insulation blankets, and provide a wide range of features and advantages.

Protective Film	To be removed
White Coating	< 5 µm typical
Polyimide/Aluminum	~25 – ~100 µm, substrate dependent
Aluminum Layer - Optional	< 1 µm typical
Adhesive layer - Optional	< 60 µm typical

2. Thermo-Optical Properties

Coating type			
	White standard	**Diffusive reflective mirror**	**White customized**
Operational wavelengths	VIS-FIR	VIS-FIR	VIS-FIR
α	< 0.4	< 0.2	0.12-0.7
ε	> 0.7	< 0.2	0.03-0.9

3. General Properties

Substrate material	• Polyimide / Aluminum
Coating thickness	• <5 µm
Physical	• Density: 1.95 - 2.08 g/cc • Water Absorption: 0.2 – 0.4 %

Mechanical (Without adhesive)	• Tensile Strength (MPa):
	  ○ Polyimide substrate - 138.0 – 79.0
	  ○ Aluminum substrate – 165
	• Ultimate Elongation (%):
	  ○ Polyimide substrate – 65-83
	  ○ Aluminum substrate – 2.5
	• Modulus of Elasticity (GPa):
	  ○ Polyimide substrate – 2.0 – 2.8 GPa
	  ○ Aluminum substrate – 69 GPa
	*The above properties are not guaranteed, since in most cases they are averages of various sizes, product forms and method of manufacture.

Chemical content	• 100% inorganic
Surface resistivity	• In dissipative range
Certificates	• RoHS, REACH, ISO 9001:2015, AS9100

4. Available Configurations

		Polyimide	Aluminum
Thickness in mil (µm)		1 (25.4 µm) 2 (50.8) 3 (76.2)	4 (101.6)
Service temperature (C°)	**Without adhesive**	long term: (-)196° to (+)350°; Short term: up to (+)400°	
	Standard adhesive	long term: (-)40° to (+)121° Short term: up to (+)177°	
	Low-outgassing adhesive	long term: (-)50° to (+)150°; Short term: up to (+)260°	
Delivery formats		• Sheet: 20x30 cm / 20x60 cm • Roll: 20/30 cm width, min. 5 m length • Die cut (Pre-cut): Supplied as tight-tolerance cut to shape labels according to drawing	
Perforation		To facilitate air passage during launch, the film may be perforated. The perforation may be done before/after the coating process, upon request.	

5. Handling and Storage

Cleanliness	• Class 100 – ISO 5
Abrasion Resistance	• Moderate
Cleanability	• Coated foils can withstand cleaning with ethanol, IPA of acetone with no change in optical and technical characteristics. • The coating can also be cleaned with up to 10 bar air pressure.
Storage conditions	• Indoors (temperature approx. 20 Celsius; RH approx. 50%)
Standard shelf life	• Minimum of 12 months after the date of shipment, provided that the material is stored in its original unopened container under the storage conditions