

ARclad® 93886 is a highly conductive heat seal adhesive supported by a tin coated copper foil carrier with a black coverlay. The tin coated copper is an electronic grade foil and possesses oxidation and corrosion resistance to undesirable byproducts generated during elevated temperature encapsulation of photovoltaic modules and over the life of the modules.

The adhesive resists creep and maintains excellent electrical and adhesive properties at elevated temperatures, in humid environments, and upon exposure to thermal shock when encapsulated in a photovoltaic module.

APPLICATION GUIDELINES

Heat tack adhesive to product under 70 psi for 5 seconds at 100°C, then heat in oven for 30 minutes at 145°C. If heat tacking is not an option, adhesive may be adhered to product under vacuum for 30 minutes at 145°C.

PRODUCT APPLICATIONS

The typical use for this product is as a bus bar for photovoltaic applications. Additional applications include EMI shielding for cellular phones, computers, PDAs, disk drives, modems and automotive electronics. It may also be used for cable assembly shielding for satellites, electronic vehicles, and robotics, as well as for seaming in architectural applications.



FEATURES AND BENEFITS

- Highly conductive adhesive
- Electronic grade tin-coated copper foil
- Low resistance in the XY-plane
- Suitable for small contact applications (6 mm X 6 mm)
- Metal oxide penetration for direct electrical contact with metal substrates
- Adhesion to a wide range of substrates including Kapton, tin, copper, aluminum, stainless steel, ITO and other metal substrates
- Able to be slit to narrow widths (~ 2 mm)
- Able to withstand elevated temperature and thermal cycling
- Black coverlay film on back side

Product Information Sheet
ARclad® 93886 (Developmental)



Product Construction			
	Typical Values*		Description
Coverlay film thickness	2.0 mil	51 µm	Black PET film
Adhesive thickness	1.0 mil	25 µm	Dielectric acrylic adhesive
Copper foil thickness	1.4 mil	36 µm	Electronic grade tin coated copper foil
Adhesive thickness	1.2 mil	30 µm	Conductive heat seal adhesive
Total thickness	5.6 mil	142 µm	

*All stated values are nominal and should only be used as a guide for selection. They are not specifications.

Technical Properties			
Attribute*	Typical Values*		Test Method*
Peel of Heat Activated Tape to Glass	> 40 oz/inch	> 11 N/25mm	ART 15008, 12 ipm, 90°
Volume Resistance	< 50 mΩ		ART 3035, 1"x1" gold electrodes
Electrical Properties	~5 amp		Current Carrying Capacity ¹
Backing color	L* 8.5 a* 0.20 b* -1.0		UV-Vis with 60 mm integrating sphere – 380-780 nm; D65 illuminant; 10° standard observer angle
Recommended storage of unconverted product	70°F ± 20°F 50% ± 20% RH	21°C ± 11°C 50% ± 20% RH	
Shelf life of unconverted product	Not to exceed 6 months from date of manufacture		

¹Approximate value based on 0.50" x 0.25" area.

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Note: The information contained on this data sheet is based upon test results of limited quantities of this material and may be modified by Adhesives Research following additional production experience and evaluation. This data should not be used in preparing specifications. Products identified as developmental may be subject to modification by Adhesives Research, Inc.

APPLICATION AND STORAGE OF PRESSURE-SENSITIVE ADHESIVE TAPES

Pressure-sensitive adhesive tapes function as a mechanical product; however, the adhesive itself is a chemical composition that can be sensitive to environmental conditions. A purchaser of pressure-sensitive adhesive products should be aware of the shelf life of each product and not purchase more than it can use before the expiration date. Shipping and storage conditions affect shelf life. The optimum storage temperature is 70 °F (21 °C). Cool, dry storage is recommended.

For best results...

- 1) The surfaces you wish to bond should be clean and free of oil, moisture and dust. If the surface temperature is below 40°F, it may be difficult to achieve a proper bond.
- 2) Do not use a pressure-sensitive adhesive product where it will be exposed to temperatures lower or higher than those designated for each product. Heat can destroy the effectiveness of the bond and extreme cold can cause the adhesive to harden and not adhere properly.
- 3) When the tape is applied, use firm hand or lamination pressure to achieve contact between the adhesive and the surface to which it is applied. Hand rollers or nip rollers may be needed for certain products or applications.

Consult your AR sales representative if you need additional information.

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