Product Information Sheet
ARcare® 93758

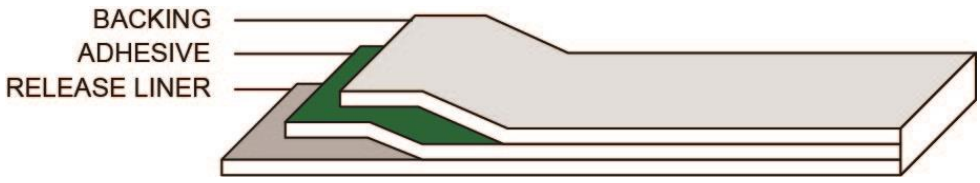
Adhesives Research®

ARcare® 93758 is a highly conductive pressure sensitive adhesive (CPSA) supported by a tin coated copper foil carrier. 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 said modules.

The acrylic adhesive is a firm high performance PSA, which 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.

PRODUCT APPLICATIONS

The typical use for this product is as a bus bar for photovoltaic applications. Other applications include EMI shielding for cellular phones, computers, PDAs, disk drives, modems and automotive electronics, cable assembly shielding for satellites, electronic vehicles and robotics.



Product Construction			
	Typical Values*		Description
Copper foil thickness	1.4 mil	36 µm	Electronic grade tin coated copper foil
Adhesive thickness	1.0 mil	25 µm	Highly conductive PSA
Liner thickness	2.0 mil	51 µm	Clear polyester release liner
Total thickness	2.4 mil	61 µm	(Excluding liner)

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

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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)
- Cohesive heat resistance
- Conductive PSA forms strong immediate bonds
- Able to withstand elevated temperature and thermal cycling when encapsulated in photovoltaic module
- No pre-tack step required
- Thin consistent bond line
- Conductive adhesive disperses charge over large area to address high current density and arcing related issues
- Low liner release prevents bunching or stretching of adhesive and a reliable transfer to substrates

Technical Properties			
Attribute*	Typical Values*		Test Method*
Peel adhesion on stainless steel	35 oz/inch	9.7 N/25mm	180°, 12 ipm, 1 hr. dwell
Tensile Strength	30.2 lb/in	52.8 N/cm	12 ipm
Static Shear	>1,000 minutes		½" x ½", 500 grams
Static Shear, elevated temperature	≥ 15 minutes		110°C, 5 min dwell, ½" x ½", 250 grams
Liner Release	34 g/2"		180°, 300 ipm
Flame Retardancy	Pass		Per UL 510, Product Category OANZ2, Adhesives Research file No. E318981
Electrical Properties	~5 amp		Current Carrying Capability[1]
Electrical Properties	4.8×10^{-4} Ω/□		Sheet Resistance[2]
Volume Resistance	≤ 10 mΩ		ART3035 - 1" x 1" electrodes
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 one year from date of manufacture		

1. Approximate value based on 0.50" X 0.25" area.
2. Four point probe placed on adhesive surface of 0.5" wide sample. Probes spaced 0.5" apart.
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Accelerated Aging Performance			
Conditioning	180° Peel Stainless Steel[1] (oz.in)*	180° Peel Glass[1] (oz/in)*	Volume Resistance[2] (milliOhm)*
RT-1 week age	68	52	4.96
65°C-1 Week Age	80	74	5.37
120°C-1 Week Age	72	55	3.82

1. Samples conditioned 1 week @ specific temperature. Samples tested @ 12" per minute.
2. Calculated from four point probe sheet resistance. Test Method: ART 15093
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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.

THIS IS NOT AN OFFER
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AR limits the purchaser's remedies in the event of a breach of any warranty. The purchaser's exclusive remedy and AR's obligations for a breach of any warranty shall be as set forth in the Sales Order Acknowledgment.

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North America – Headquarters
Adhesives Research, Inc.
400 Seaks Run Road
Glen Rock, PA 17327
Phone: +1 (717) 235-7979
Toll-free: +1 (800) 445-6240
Fax: +1 (717) 235-8320

Europe
Adhesives Research Ireland, Ltd.
Raheen Business Park
Raheen, Limerick
V94 VH22 Ireland
Phone: +353 61 300 300
Fax: +353 61 300 700

China
Adhesives Research China Co., Ltd.
Room 2710-2711, Building B
Far Glory International Square
No. 317 Xianxia Road
Shanghai, China 200051
Phone: +86 (21) 6150 4358
Fax: +86 21 6278 5576

Singapore
Adhesives Research PTE Ltd.
1 Paya Lebar Link
#04-01 Paya Lebar Quarter 1
Singapore 408533
Phone: +65 6955 8528
Fax: +65 6777 7261