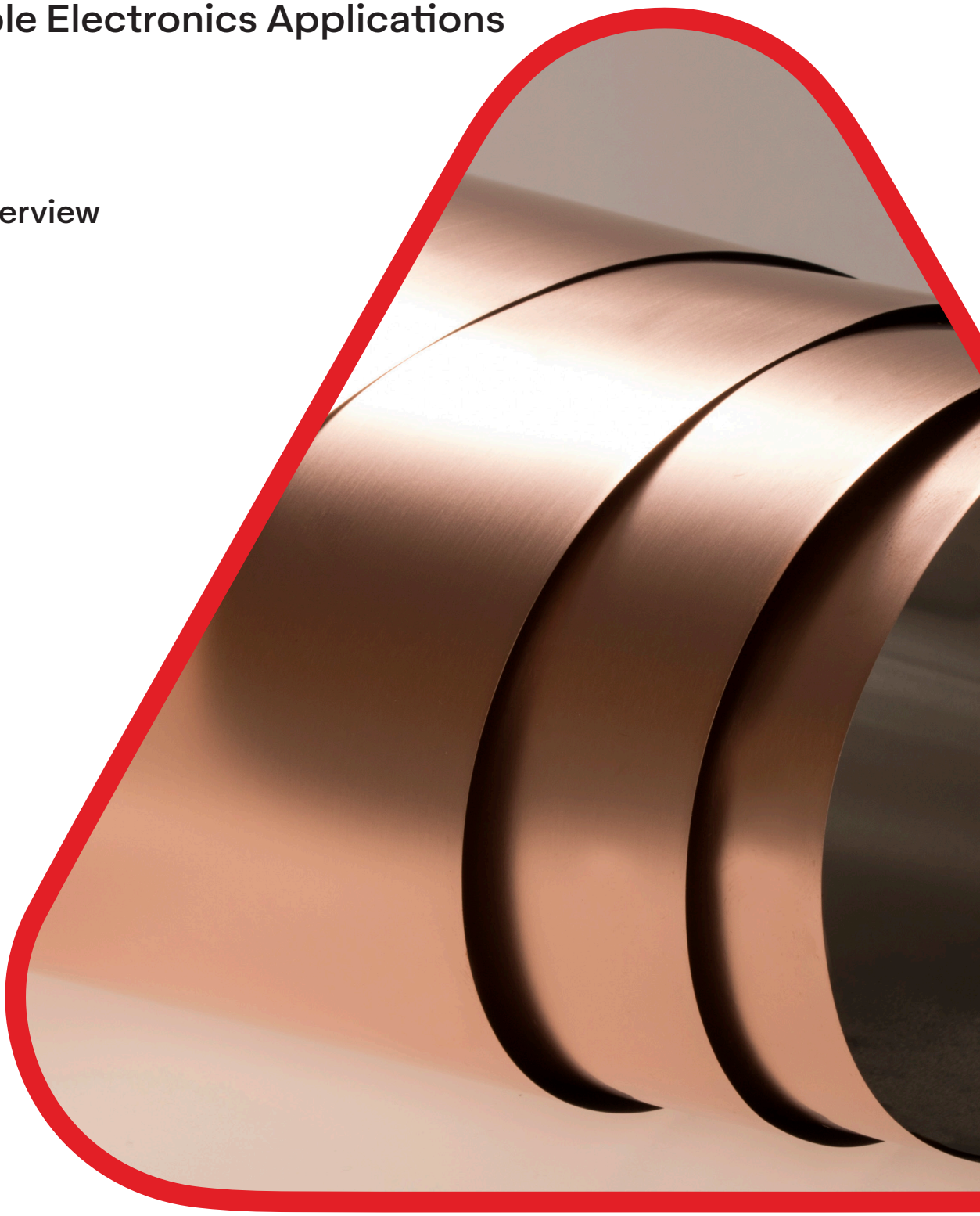
Industrial Films

Copper Skin™ on Al Foil

Conductive Aluminum foil-based films

For Flexible Electronics Applications

Product Overview



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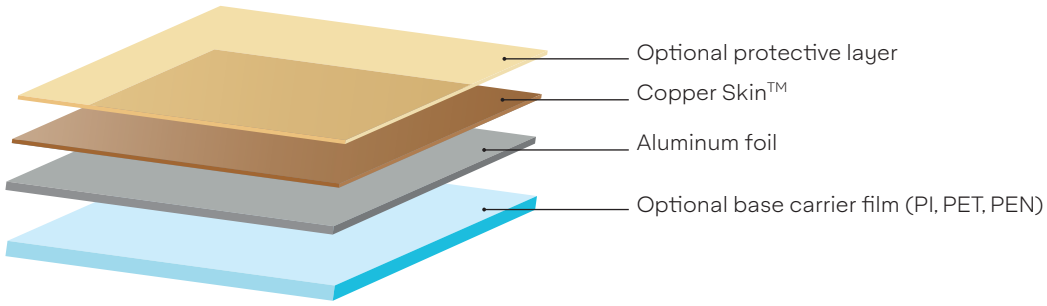
The Problem

Copper foil is well established in the electronics industry, but cost constraints are driving the search for alternatives. Aluminum foil would be the natural choice, with its high conductivity and attractive price. However, Al foil cannot be electrically connected by soldering due to its native oxide layer.

Solution: Copper Skin™ on Aluminum Foil

Avery Dennison Hanita offers a highly conductive Aluminum foil laminate, with a proprietary Copper Skin exterior coating, enabling high electrical connectivity. The laminate provides a cost-effective alternative to the Copper foil traditionally used in flexible electronics, delivering the economic benefits of Aluminum foil, and the electrical connectivity of pure Copper substrates. Copper Skin is now available with an optional protective layer to enhance corrosion resistance.

Typical structure



Applications

- Medical devices such as heating pads
- General automotive heating applications (ie car seat, steering wheel etc)
- LED lighting
- RFID antennas
- Back contact for OLED lighting
- Cable shielding
- Copper tape
- Single layer PCB/FPC

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Product Data Overview

Parameter	Min Value (6 mic foil)	Max Value (100 mic foil)	Units
Appearance	One side Aluminum, other side Copper		
Pure Copper Thickness Range	150 - 300		nm
Density	2.5 - 2.7		g/cm3
UTS	>160		N/mn^2
Elongation	>2		A(50%)
Resistivity	26.5×10^{-9}		Ω*m
Melting point - foil	660		°C
Coefficient of Linear Expansion	28×10^{-9}		C^{-1}
Thermal Conductivity	230		W/m*C
Recommended storage conditions	5 - 40 <50		°C % RH

Features and Benefits

- **Low cost alternative** - Economic alternative to Copper foil products, manufactured using a proprietary, high volume manufacturing process
- **Flexibility of product construction** - Wide selection of conductive layer thicknesses, precisely matching conductivity demands of application
- **Excellent mechanical properties** - High heat stability, flexibility, metal adhesion and overall durability
- **Ready for mass production** - Available in a range of widths and lengths as required
- **Optional clear protective coating**
- **Wide range** - Choice of heat stabilized base carrier films, to match application requirements - PI (Kapton®), PET, PEN
- **Compatible to all soldering processes** - Reflow, SMT, conductive adhesives, etc.

Please review the storage conditions outlined in the product specification sheets

About Avery Dennison

Avery Dennison Corporation (NYSE: AVY) is a global materials science company specializing in the design and manufacture of a wide variety of labeling and functional materials. The company's products, which are used in nearly every major industry, include pressure-sensitive materials for labels and graphic applications; tapes and other bonding solutions for industrial, medical, and retail applications; tags, labels and embellishments for apparel; and radio frequency identification (RFID) solutions serving retail apparel and other markets. Headquartered in Glendale, California, the company employed more than 32,000 employees in more than 50 countries in 2020. Reported sales in 2020 were $7.0 billion. Learn more at www.averydennison.com.

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