



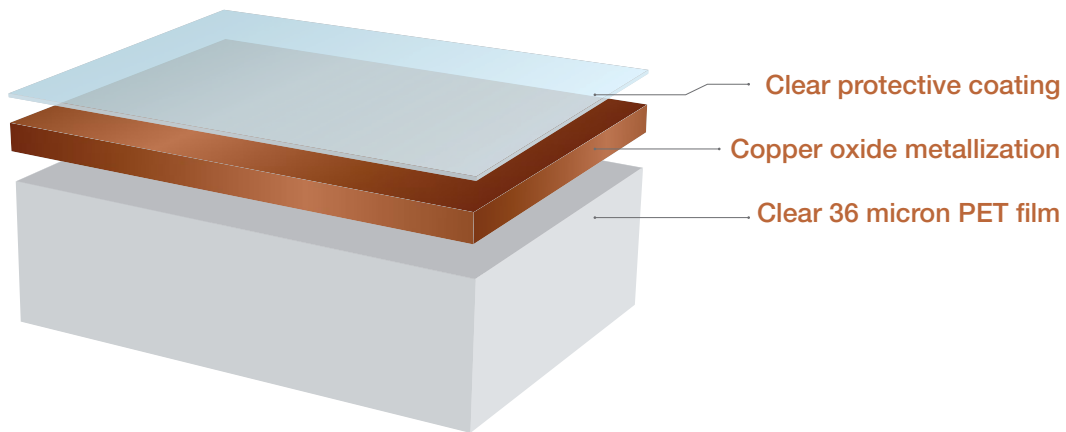
Copper Anti-microbial Surfacing Films

Preliminary Information Sheet

Copper coated PET for anti-microbial surface protection

Throughout history, copper has been recognized for its antibacterial and purifying qualities, and its anti-microbial efficacy is well documented*. Using highly controlled evaporative deposition of nanometer-thick pure copper and alloys, Avery Dennison Hanita has developed a speedy, roll-to-roll copper oxide coating endowing film with exceptional anti-microbial properties. The new development features a proprietary surface coating to protect the copper oxide layer from discoloration - without affecting the copper's anti-viral properties.

These coatings have been tested according to ISO21702 and have been proved an effective virustatic**.



Applications:

- > Touch applications such as doors, handles, buttons
- > Protective surfacing for health care

Features and Benefits:

- > Effective anti-microbial performance
- > Competitive option to existing anti-viral coatings
- > Continued effective performance - no long term degradation
- > Color stable***

Optional features for custom product development:

- > **Range of PET thicknesses - 23-175 micron**
- > **Adhesion promotion treatments:**
 - **Heat-activated adhesives targeting different substrates**
 - **Pressure-sensitive adhesive**

Testing:

Laboratory testing shows that, when cleaned regularly, antimicrobial copper surfaces kill greater than 99.9% of the following bacteria within 2 hours of exposure: MRSA, VRE, Staphylococcus aureus, Enterobacter aerogenes, Pseudomonas aeruginosa, and E. coli 0157:H7.

*** Tested for 92 hours at 40C, 90% humidity

**This Avery Dennison product demonstrates effective anti-viral performance, with a mean 99.999% reduction in viral concentration compared to the control sample when tested under ISO21702.

Antimicrobial copper surfaces are a supplement to and not a substitute for standard infection control practices and have been shown to reduce microbial contamination but do not necessarily prevent cross-contamination or infections; users must continue to follow all current infection control practices.

*Contact killing and antimicrobial properties of copper.
J Appl Microbiol. 124, 1032--1046

About Avery Dennison

Avery Dennison (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 employs more than 30,000 employees in over 50 countries. Reported sales in 2020 were \$7.0 billion.

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