

Specification: ARA-LT® „Hi-Con“

Laser-transferable metallic layers on PET-films Article no.: 3.01.409.00

Description:

ARA-LT® „Hi-Con“ describes a **Highly-Conductive** metallic layer on a PET film. The PET film is transparent for the laser wave length used (e.g. 1064 nm) and serves as a carrier for the metallic layer. Depending on the purpose of use, the metallic layer may be embedded in a thin release layer and a thin adhesive layer. The whole coating is done by using the vacuum based coating technology Physical Vapor Deposition (“PVD”). The coated PET film is rolled up on a roll core in such a way, that the PVD-coating is located on the inner side. For packaging, a cardboard box with a slit can be used - to enable the taking of the coated film for manual use.

Purpose of use:

With ARA-LT® „Hi-Con“ different products can be equipped to get electrically highly conductive markings, lines or patterns with excellent mechanical and chemical properties. A description about how it works is given in the “operation instructions”. Individualization or customization can be reached just by using standard laser software. An example is shown below: A circuit with a thickness of around 5 µm was applied on a glass surface by using a standard Nd-YAG laser.

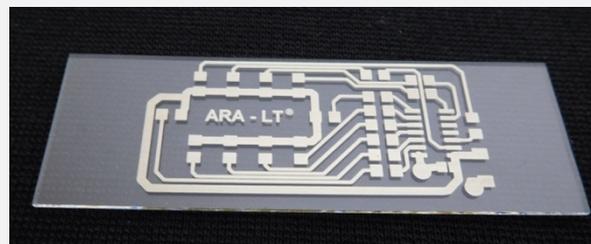


Fig. 1: Abrasion resistant, highly-conductive PVD lines as a circuit on glass

Examples for suitable product materials to be equipped with ARA-LT® „Hi-Con“ are glass and ceramics.

Technical data:

PET film:

The corresponding data sheet is attached. The thickness of the PET carrier is around 72 µm and. It's width and length as well as the core diameter can be adjusted upon request. Available PET thicknesses are 12 µm, 23 µm and 72 µm.

The standard width is 30 mm.

Metallic layer:

The metallic layer consists of silver and copper mainly, with a thickness of 350 nm or more. Depending on the purpose of use a release or adhesion layer can be added.

Both of them measure only a few nanometers in thickness and consist of thin metals.

Properties of the PVD-coated PET film:

- It's mechanical, chemical und thermal resistance is limited by the PET carrier itself (Please see corresponding data sheet).
- Storage conditions: 8-25 °C; RH < 60 %; one year

Properties of the transferred metallic layer:

The mechanical, chemical and thermal properties as written below are valid only in case of a correct transfer on a suitable product surface.

- Optical appearance: copper, silver or champagne
- Electrical conductivity: Comparable to copper
- Adhesion and abrasion resistance: excellent
- Chemical stability: Not affected by standard cleaning agents, acids and bases
- Thermal stability: up to 400 °C
- Corrosion resistant
- The product surface is not affected by the PVD-marking
- The manufacturing is environmentally friendly

Contact

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