



Reduced structural depth - better adhesion

For many years SCHLENK has specialized in the production of the thinnest metal foils with a wide variety of possible surface treatments and supply formats.

SCHLENK has supplied copper and nickel foils to battery manufacturers for over 20 years and, since 1998, has used special coating processes and families of electrolytes that have been under continuous development to produce metal foils with functional layers.

SCHLENK has succeeded in using the neutral conductor principle for foils. This has resulted in an advancement in structure size in sub-micrometer dimensions (≈ 100 nm).

In comparison with conventional treatments, the depth of the precipitated structure is less by a factor of 10. In contrast to previous knowledge, which suggested a direct relationship between the size of the structures and the increase in adhesion, this innovative treatment significantly improves the adhesive properties of the foil surface with respect to a wide variety of substrates.

HIGH ADHESION FOILS

Foils optimized for adhesion

▶ OUTSTANDING PRODUCT CHARACTERISTICS

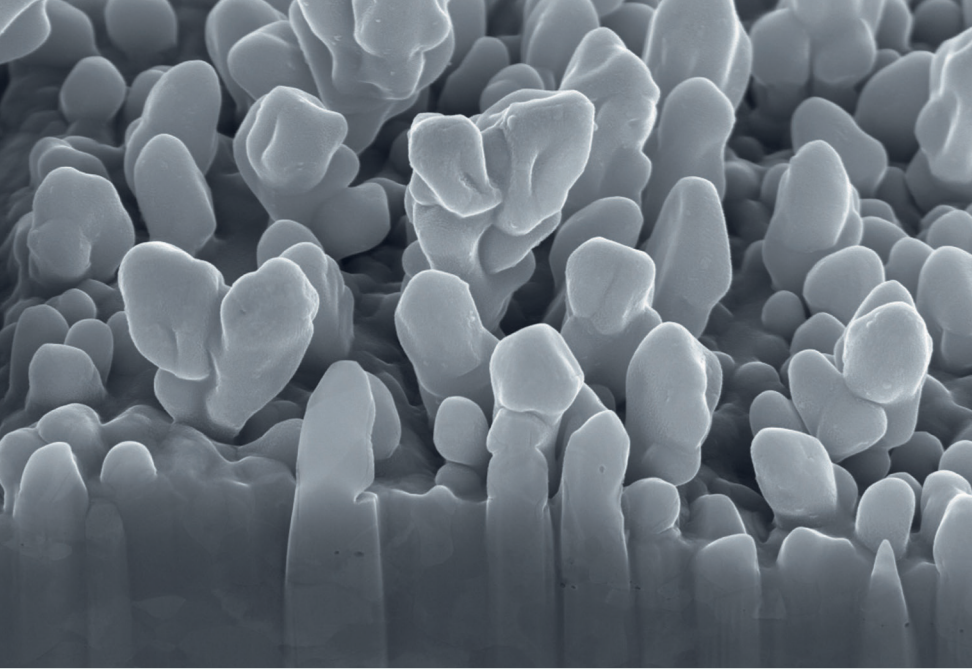
- Excellent adhesion values
- Improved adhesion with respect to materials that are difficult to process
- Structural depth $< 0.2 \mu\text{m}$
- Coating on one or both sides possible



Peel strength values for standard foil

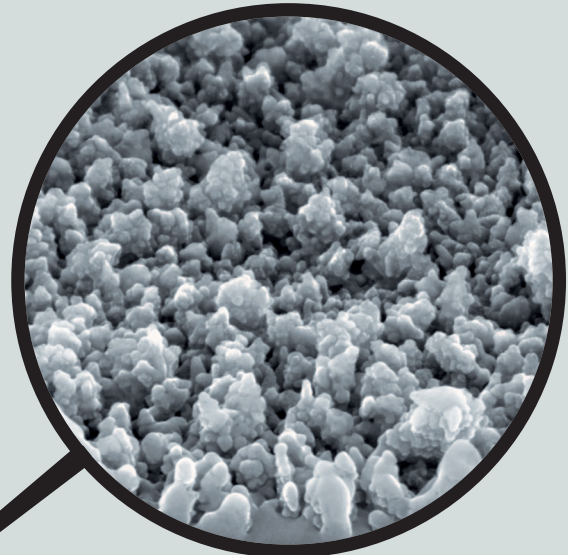
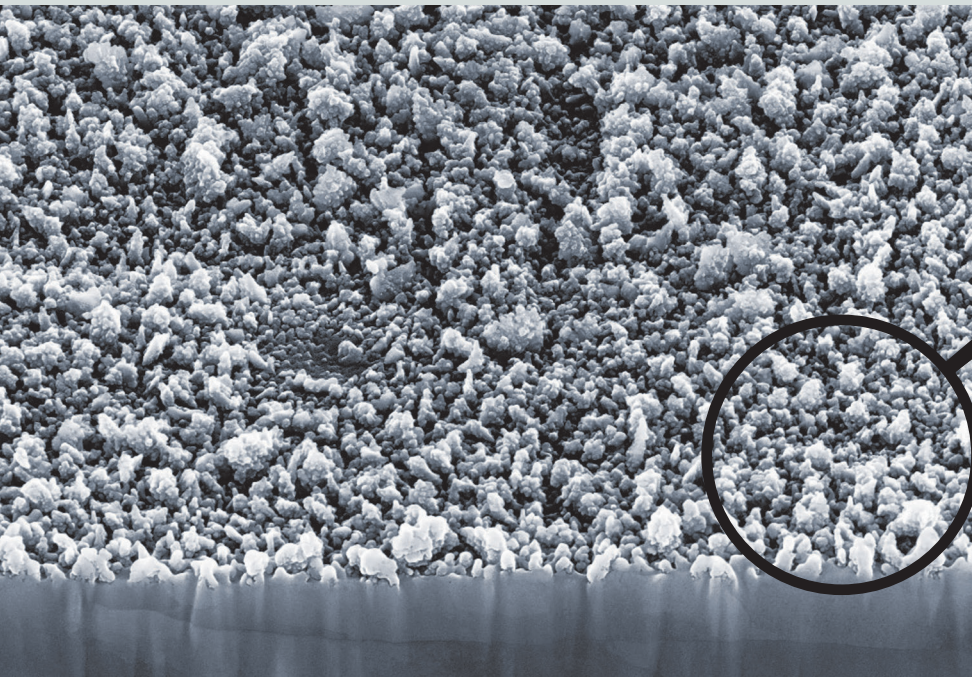


Peel strength values for adhesion-optimized foil



Standard low profile
(Standard foil)
Image taken at 25,000x *

100 nm



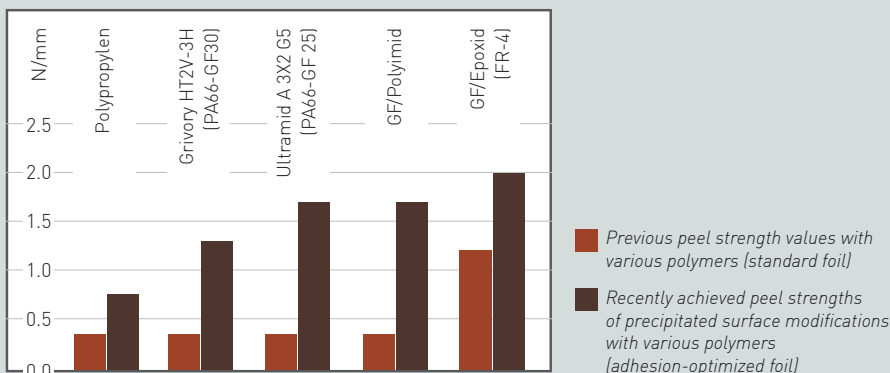
Ultra low profile
(Foil optimized for adhesion)
Image taken at 50,000x *

100 nm

Ultra low profile treatment
(Foil optimized for adhesion)
Image taken at 25,000x *

100 nm

*Image source: SCHLENK Analysis



APPLICATION AREAS

- Lithium-ion batteries
- Metal hydride batteries
- Special batteries
- Flexible circuit boards
- Circuit boards for high frequency applications
- Shielding foils

Data in this publication is based on careful investigations and is intended for information only. All information shall not be binding, shall carry no warranty as to certain ingredients, as to the fitting for a special purpose, as to the merchantability, or as to the industrial property rights of third parties. Any and all users are obliged to carry out tests on their own authority as well as to check the suitability and the danger of the respective product for a particular application. SCHLENK assumes no liability in this regard; neither to the exactness nor to the completeness of the data. We apply our General Sales Conditions to be found on www.schlenk.com.

Schlenk Metallfolien GmbH & Co.KG
Barnsdorfer Hauptstraße 5
91154 Roth
Tel.: +49 (0)9171 808-0
Fax: +49 (0)9171 808-200
E-Mail: foils@schlenk.de