SCHLENK

Competencies

Rolling:
Wide, ultra-thin

Slitting:
Narrow, thin, precise

Surface treatments:
Galvanic process, roll cladding, degreasing

Materials

- Copper, Silver, Nickel and their alloys
- Thickness: 0.006 mm - 0.400 mm, width: 1 - 650 mm

Forms of delivery

- Different core sizes
- Steel, cardboard or plastic core
- Spools / plastic cores with side-shields

Individually tailored deliveries

- Small lots for R+D
- Large lots for mass production
- Complete container loads

Summary

- RA foils made from high purity copper grades
- Excellent adhesion values with “SCHLENK High Adhesion Foils”
- Optional coating on one or both sides available
- Highly flexible and fast organization
- Experienced application engineering team
- Well equipped laboratories including Scanning Electron Microscope (SEM)
- Close cooperation with leading research institutes and R+D departments


Rolling mill Bernlohe


Site Georgensgmünd

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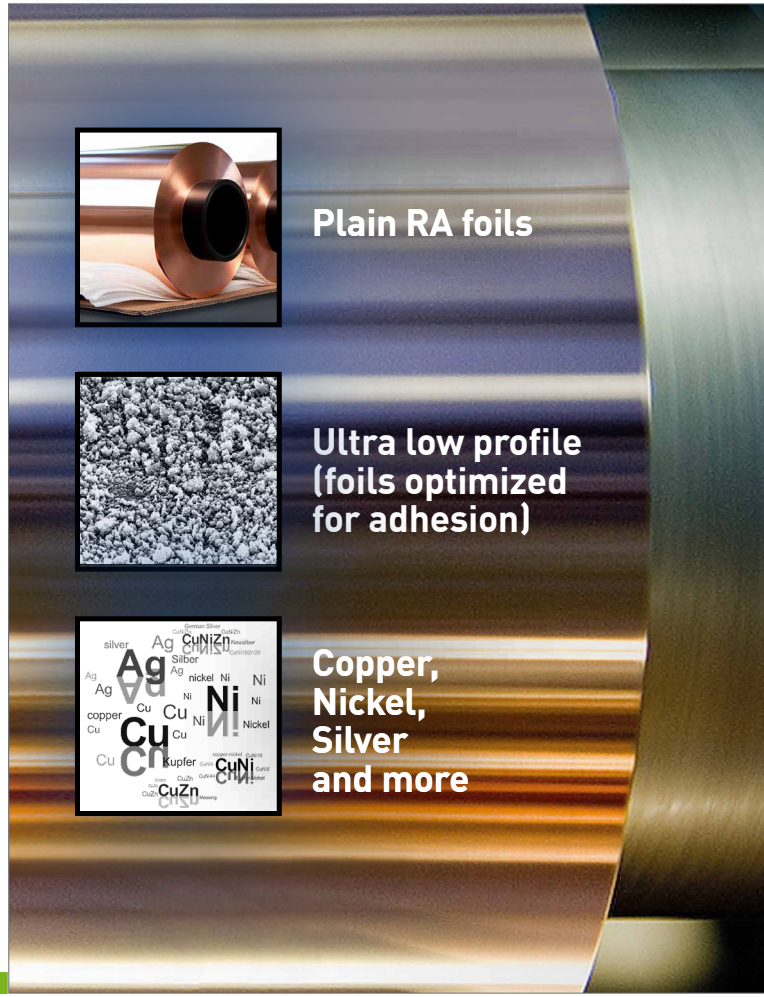
Rolled Foils in Batteries

Product information



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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.

Using Foils in Batteries

Coating of battery cells

- SCHLENK Foils for batteries are mainly used in Li-Ion batteries
- Plain foils are primarily used for coating
- Battery manufacturers appreciate one or both sides Cu-treated copper foil as it shows better adhesion in coating processes
- Plain silver and nickel foils are used for special batteries

Tabbing of battery cells

- Slit to narrow width
- Plain nickel or copper foils
- Cu-treated copper foils

HIGH ADHESION FOILS

Foils optimized for adhesion

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.

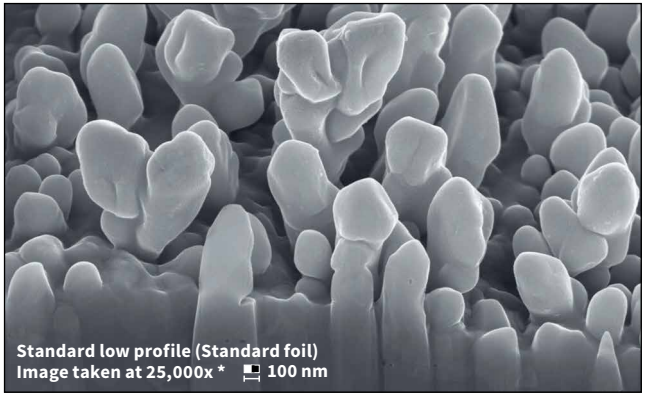
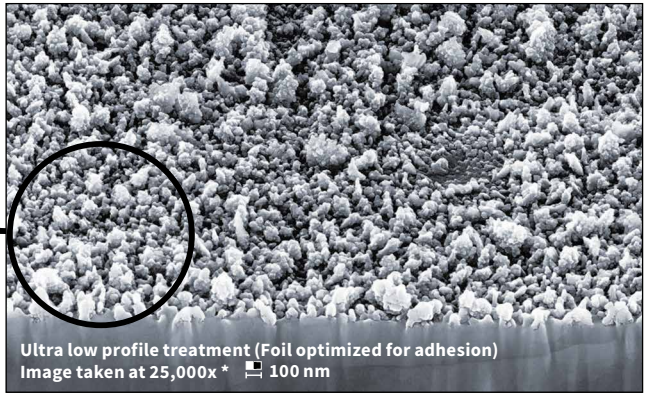
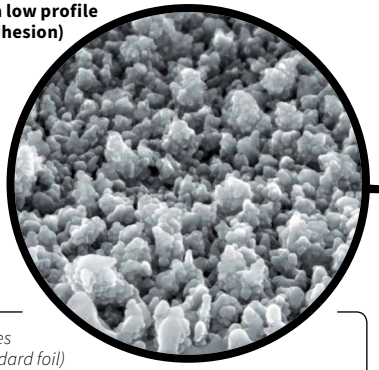
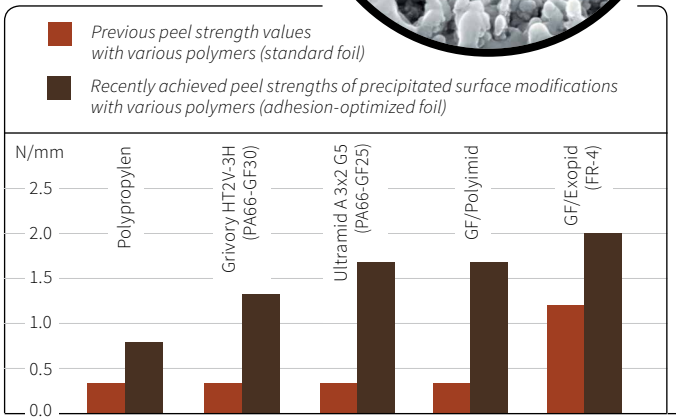


*Image source: SCHLENK Analysis







Consideration for using rolled foils:

- Many different alloys are available
- Mechanical stability at elevated temperatures is excellent
- High flexibility, even under extreme conditions
- Symmetrical surface properties
- Surface finish can be adjusted from very smooth to very rough