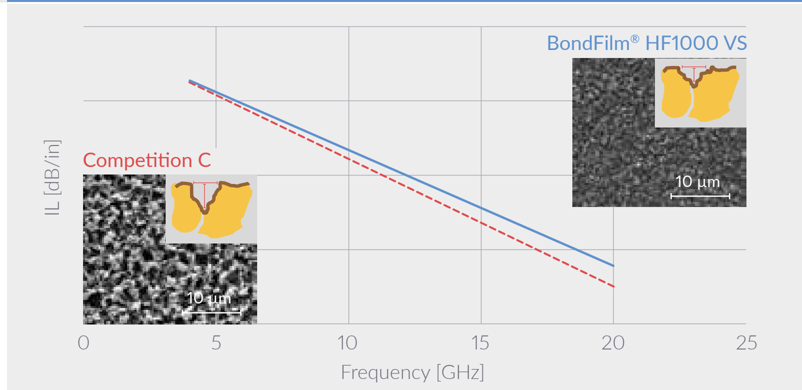
BondFilm® HF1000 VS

Bonding enhancement process for high frequency manufacturing

Insertion loss vs. frequency



Enhanced performance

For high frequency applications there is a demand for a bonding enhancement process that gives the same excellent thermal reliability of the BondFilm® product range, but with superior performance in terms of reduced signal loss compared with the standard solutions available. BondFilm® HF1000 VS is a cost effective drop in replacement for conventional bonding enhancement solutions. This new process can offer enhanced performance for high frequency PCB manufacturing.

Features and benefits

- Simple drop in replacement for existing bonding enhancement equipment
- Greatly reduced signal loss fulfills signal integrity requirements
- Competitive process costs with current bonding enhancement systems
- Highly compatible with a wide range of high performance dielectric materials

BondFilm® HF1000 VS
Process flow

Acid Clean UC
Removal of moderate oxidation

BondFilm® Cleaner MS
Removes grease and fingerprints

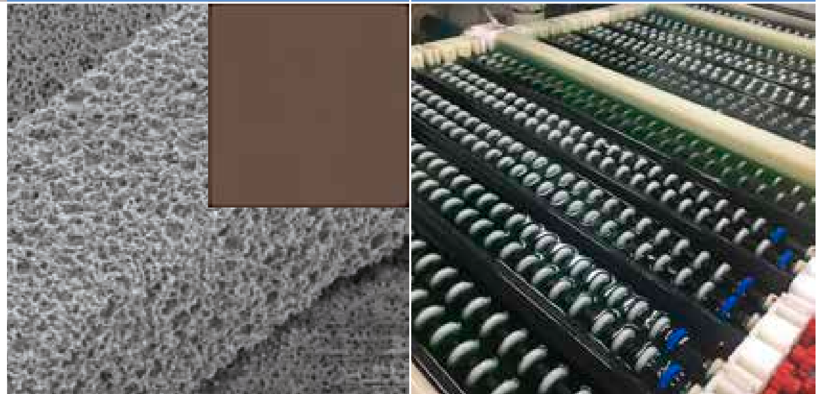
BondFilm® Activator MS
For even coverage and no drag-in into main module

BondFilm® HF1000
Creates uniformly roughened brown organo-metallic coating through intergranular etching

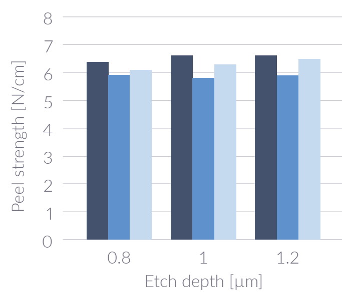
BondFilm® VS Promoter
Enhanced adhesion performance with high frequency materials

BondFilm® MS 1000

Surface of BondFilm MS1000 | **45 g/L Cu of BondFilm MS1000**



Peel strength results with BondFilm® MS1000



- Low Tg/High Loss
- Medium Tg/Medium Loss
- High Tg/Low Loss

45 g/L

high copper loading

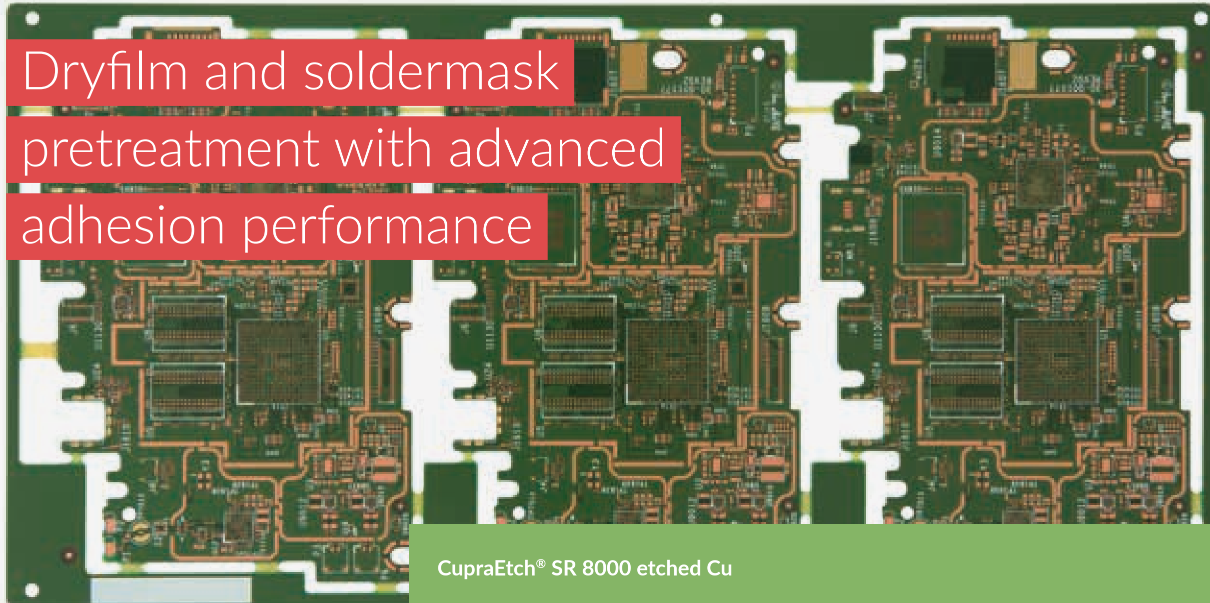
Low sludge requirement

One of the key benefits of our new BondFilm® MS 1000 is its high copper loading and low sludge over the market-standard oxide replacement processes. Its copper loading is more than 40 % higher than that of conventional oxide replacement systems. With a low etch depth of only 0.8 µm excellent thermal reliability and sufficient adhesion for I/L bonding on different Tg materials can already be obtained. The low sludge characteristic of the BondFilm® MS 1000 process shows great operational benefits, and significantly reduces equipment maintenance as well as downtime frequency.

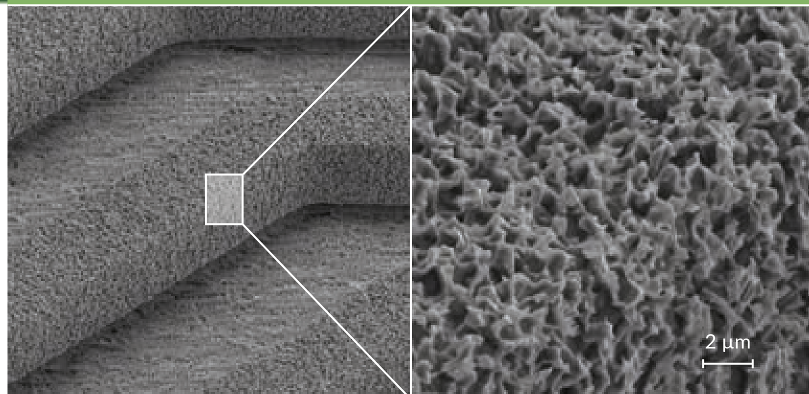
Features and benefits

- Direct drop-in to conventional oxide replacement line
- Low sludge formation
- High copper loading
- Low COD/m² process board (> 50 % reduced bleed/m²)
- Increased process efficiency (significantly reduced downtime)
- Lower process costs
- Savings in wastewater

CupraEtch® SR 8000



CupraEtch® SR 8000 etched Cu

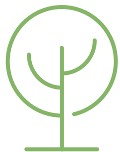


CupraEtch® SR 8000 process

SoftClean UC solution
25 – 30 °C / 15 – 30 s

CupraEtch® SR 8000 solution
25 – 40 °C / 20 – 60 s

Post-treatment
25 – 35 °C / 20 – 40 s



Metal complex free solution

Excellent dryfilm and soldermask adhesion

CupraEtch® SR 8000 is a cupric chloride based microetching system with unique additives. The simple three step process creates uniform roughening of surface at low temperatures. Atotech's cost-effective pretreatment easily drops into existing lines and reliably improves the adhesion of all copper types to industry standard dryfilm and soldermask types. Metal complex-free solution benefits in cost-effective waste water treatment.

Features and benefits

- Fulfills demanding automotive OEM requirements for soldermask adhesion
- Sucessfully passes advanced HDI requirements (< 30 µm L/S) with superior dryfilm adhesion at low etch depths
- Creates sufficient rougheness for excellent adhesion on soldermask at low etch depths
- Excellent compatibility to wide range of selective finish processes, including ENIG and IMT
- Simple analysis methods for easy handling and process control