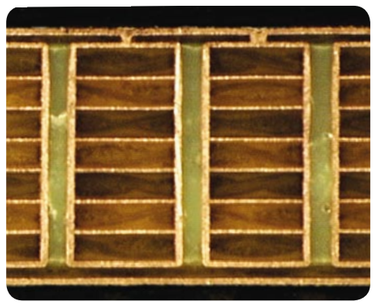
PRODUCT RANGE

J-KEM INTERNATIONAL

PERFEKTO PTH TECHNOLOGY

PERFEKTO the ultimate improvement in electroless copper PTH technology

In line with the electronic industries demand for more reliability and better production economy, J-KEM International AB has developed a technology in electroless copper process for tomorrow's electronic production. By introducing the latest generation in chemical technology thru out the entire process, the Perfekto is uniquely designed to be able to handle the new end-user reliability demands.

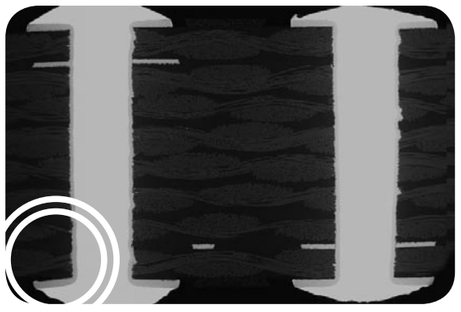


HDI board with laser drilled blind vias and buried vias produced with Perfekto high built PEC 770 process.

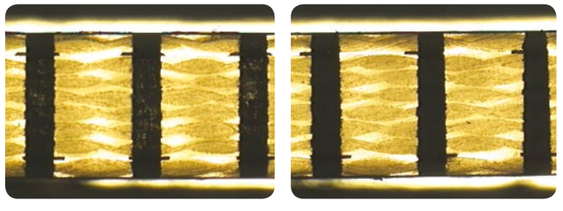
Starting from the beginning, you find the new Perfekto Acid Conditioner (P.A.C.) that represent a step forward in respect of the traditional conditioners based on the use of quaternary and cationic wetting agents. The standard conditioner is not highly selective and can create light barriers on the inner layers resulting in a weak copper-to-copper bonding. The active chemistry of the P.A.C. is of totally different nature and gives an extremely higher efficiency and initiates a 100% copper-to-copper adhesion and a high absorbance on the epoxy and glass fibre.

The Perfekto Organo Pd Activator (P.O.A.) is the key improvement of the whole Perfekto process. With the use of an innovative organic additive our new – acid free-Palladium based formulation shows an absolutely superior catalytic activity compare with the other traditional Pd based activators.

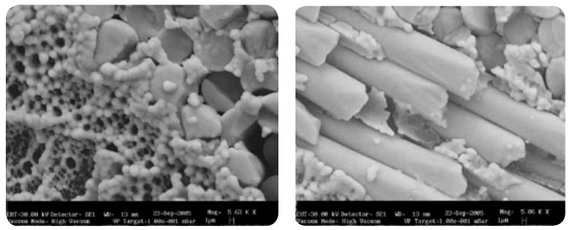
Consequently the concentration of Palladium in the working solution is extremely low, such as 30 ppm, giving a perfect result in the black light test using an low built electroless copper (0,2 µ) on high aspect ratio boards of the most different materials.



10 x Solder chock at 288°C delamination of the PCB laminate. The Perfekto innerlayer copper-copper bonding holds.



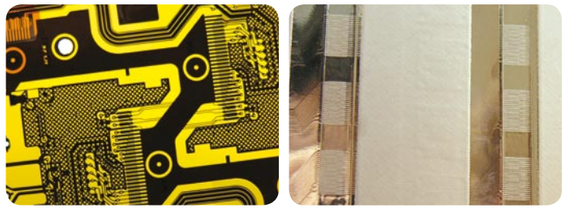
Left board produced with convetional Palladium activator copper. On the right, produced with Perfekto Organo Palladium Activator.



5 k mag of perfect copper coverage Perfekto medium built PEC 760

The Perfekto Electroless Copper (P.E.C.) is formulated for stable operation and easy to control. The deposition has a dense fine grained structure. The deposition action exhibits lateral growth which results in excellent copper coverage through the holes.
P.E.C. baths gives improved copper deposit adhesion on the hole wall and other circuit board surfaces by the integrating phenomenon of controlled initiation.
The P.E.C. baths have been formulated to profit of the unique P.O.A. and we have formulations for both vertical and horizontal applications.

PERFEKTO A.C.S (Alkline Catalyst System) is the unique optimised process, maximum reduction of alkalinity and high temperatures, for flexible printed circuit boards. In addition the combination of the high absorbing P.A.C. conditioner system, the unique features of the P.O.A. activator and the low stress self accelerating P.E.C. electroless copper baths PERFEKTO A.C.S is the outstanding process for P.I. adhesion



The unique optimum process PERFEKTO A.C.S gives perfect adhesion, no blisters and excellent coverage on exposed P.I.

FEATURES:

- Superior hole wall coverage on all substrate material
- Excellent performance for HARB´s, build up boards and blind vias.
- Outstanding hole wall adhesion
- New generation palladium activator working at extremely low (30 ppm) concentration.
- Suitable for vertical and horizontal applications.
- PERFEKTO A.C.S, the uniquely optimised process for flexible PCB production.
- The best production economy

PROCESS SEQUENCE

Product	Time	Temp
P.A.C 710 N	5-10 min	55°C
RINSING		
P.M.E 720	1 min	30°C
RINSING		
P.P.D 730	1 min	20°C
P.O.A 734	5-10 min	40°C
RINSING		
P.A.A 740	2 min	50°C
RINSING		
P.E.C - 660	15 min 0,4µ	room temp.
P.E.C - 760	20 min 1,5µ	42°C
P.E.C - 770	30 min 2,2µ	46°C
RINSING		
P.A.T 790	1 min	
RINSING		
DRYING		

ACID COPPER PLATING

For special plating demands
J-KEM has the optimum solution

J-PLATE Cu 90 H
J-PLATE Cu 90 H is an acid copper plating bath that is designed to be specially good for today's demanding board with complex design.

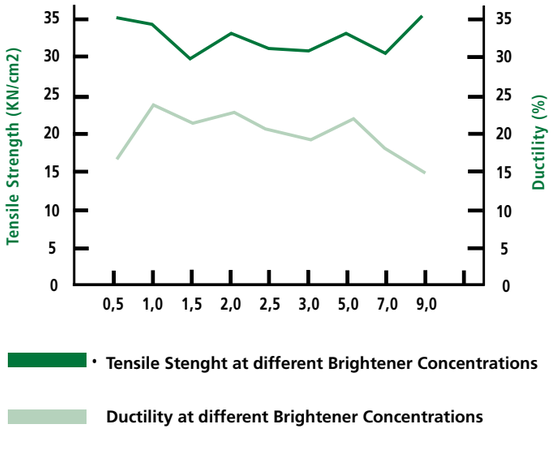
J-PLATE Cu 90 H are designed for optimum throwing power over the whole current density window all the way down to 0,5 A/dm^2. This makes the plating of blind and micro vias dramatically better

J-PLATE Cu 90H give a copper deposition that have highest possible ductility, a very uniform deposit with a fine grained equiaxed structure.

The extremely good elongation and high ductility makes J-PLATE Cu 90H ideal for flex and flex / rigid application.

J-Plate Cu 90H
- Produce Bright Ductile Copper Deposit
- Produce a Fine Grained Amorphous Copper
- Excellent Physical Properties
- Improved Levelling
- Excellent DC Distribution

J-Plate DC Acid Copper

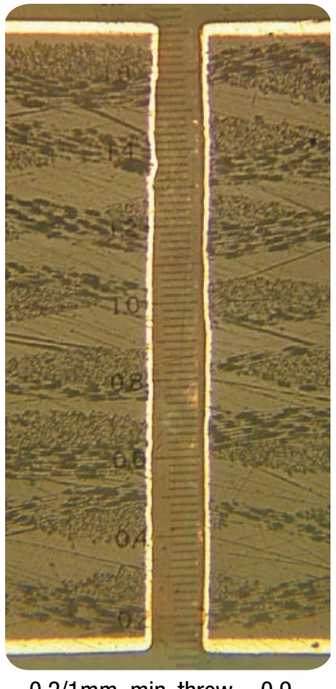


J-PLATE Cu 400
J-PLATE Cu 400 are specially made for the combination with a direct plating process (J-KEM SYSTEM-S).

J-PLATE Cu 400 is a high speed, bright acid copper plating process that produces highly levelled smooth deposit on both high and low current density levels.

J-PLATE Cu 400 has high throwing power and when operated at optimum condition it could produce hole wall to surface distribution close to 1:1.

J-Plate Cu 400
- Designed Specially for Direct Plating
- Extremely Wide Operating Window
- Highly Levelled deposition
- Maximum Resistance to Contamination
- Most Economical to Use

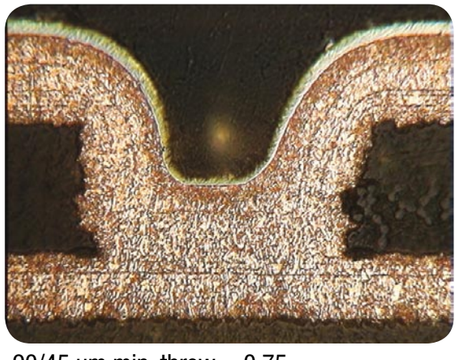


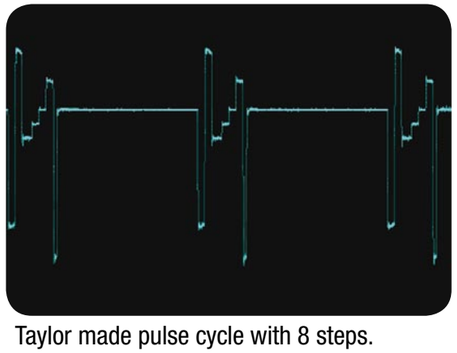
0,2/1mm min. throw = 0,9

J-PLATE PPR Cu 8000 is a newly designed acid copper bath specially designed for the most complicated board design with Pulse Periodic Reverse Plating.

J-PLATE PPR Cu 8000 gives an outstanding surface distribution and hole wall to surface distribution as close to 1:1 as possible by an astonishing throwing power.
The thickness distribution in the hole are more then 3 times better compared to standard DC.

The plating of extremely "irregular" pattern that could be handled excellently by the use of J-PLATE Cu 90 H are handled completely perfectly with J-PLATE PPR Cu 8000 but at the same time as a panel with a completely regular pattern. Also for panel plating there is an advantage with Pulse Periodic Reverse Plating as the effect of over plating at the edge are eliminated and the possible current density values are much higher and with that the productivity goes up.

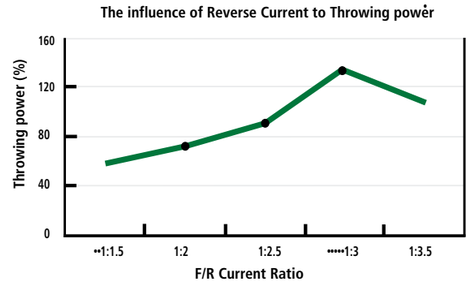

90/45 µm min. throw = 0,75

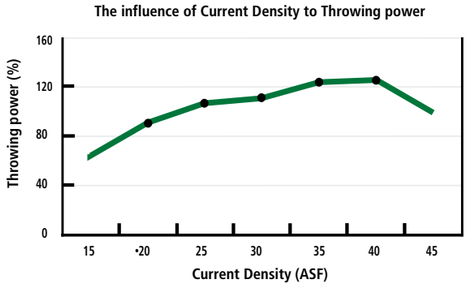

Taylor made pulse cycle with 8 steps.

J-PLATE PPR Cu 8000 could when combined with a "Multi Pulse Plater" – Rectifier from KRAFT have a Taylor made pulse cycle with up to 8 step compared to the normal two step – forward and reward. By dividing the cycle in more steps the individual pattern and board design with the specific mix of complicated pattern and blind / micro vias are handled in an optimal way. With that the most complicated pattern and difficult aspect ratio are perfectly plated.

J-Plate PPR Cu 8000
- The most Advanced Pulse Plating Bath
- Two Component Replenisher
- Superior Throwing Power
- Operates in Horizontal and Vertical Application
- Outstanding Surface Distribution

J-Plate PPR Acid Copper





DIRECT PLATING SYSTEM, SYSTEM-S

SYSTEM-S, THE REVOLUTIONARY AMPHOTERIC 3-METAL ALLOY DIRECT PLATING PROCESS.

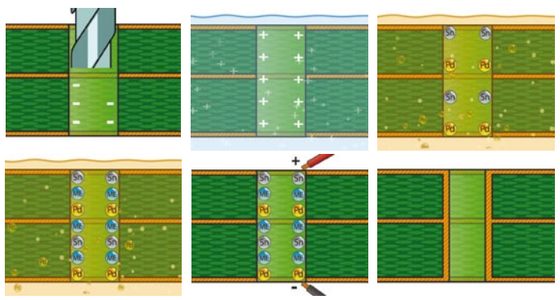
High resistance is one of the key problems with today's Direct Plating processes. This is rather amazing as conductivity must be regarded as one of the first priorities of a Plating Through Hole process.

The through hole conductivity generates the throwing power in the electrolytic plating baths and insufficient throwing power leads to thin copper deposition in the holes.

SYSTEM-S is the only Direct Plating Process that due to the innovative 3-metal alloy can deliver conductivity in level with Electroless copper. Competitive processes measure hundreds of ohm or even mega ohms.
To be able to successfully produce todays HARB, it is very important to obtain low resistance with a thin coating of the conductive layer. SYSTEM-S with the uniform highly conductive coating is measured in ångström.

Basically a three step process:

1: The negative charge hole wall after drilling
2: Conditioner neutralise the negative charge give a positive charge to the hole wall
3: Negative charged colloidal Activator is attracted and absorbed by on the hole wall
4: Colloidal Activator transformed in a highly conductive coating



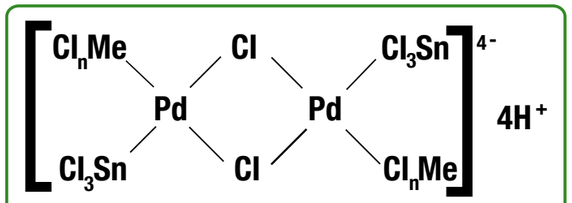
The 3-metal activator

The most important features of SYSTEM-S is that instead of using a typical Pd-Sn suspension the activator is employing a three metal combination

By introducing amphoteric metal from the III or IV group such as Al, Ti, Ga and In etc, we have seen that the through hole conductivity has increased significantly.

The other key point in the use of the third metal is due to its application as chloride salt. The strong acidity of products such $AlCl_3$ or $TiCl_4$ eliminate the use of free HCL acid both in the preparation of the activator and of its operating solution.

The elimination of free HCl acid is very important for reducing the activators acidity thus making it more suitable towards horizontal application and reduce so called black seeding between tracks.
Modified colloidal micelle with third metal:



Me is an amphoteric with valence n-1

The Intensifier:

In the rinses following the activator the colloid will be broken and by hydrolysis will have the formation of stannous and stannic hydroxide as well as a metalloid compound of the third metal.

$$Pd[Sn(Cl)_3]_n^{n-} \xrightarrow{H_2O} Pd + Sn(OH)_2 + Sn(OH)_4$$

Colloidal palldium micelle is distroided by hydrollsis forming stannus and stannic hydroxide

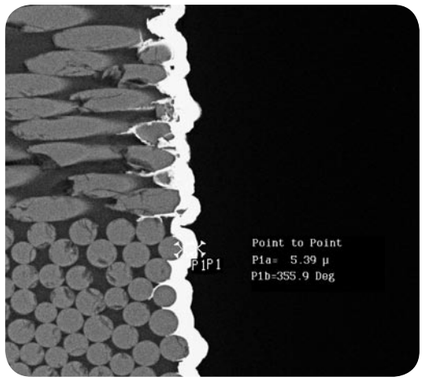
$$2\ Sn(OH)_2 \xrightarrow[OH^-]{Cu} Sn^0 + Sn(OH)_4$$

Stannous hydroxide reacts in alcaline media and ctalysed by copper to stannic hyroxide and metallic tin

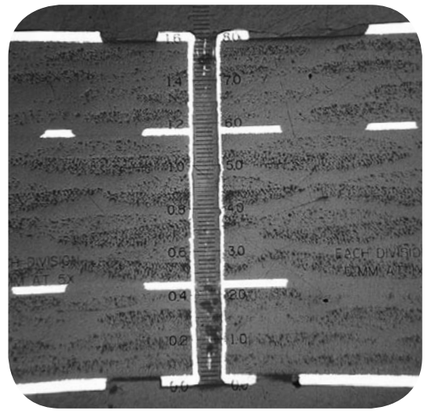
In the successive step the amphoteric metal will accomplish the function of the reaction. The action of the third metal increase the concentration of metallic tin on the hole wall and inhibit the formation of metastannic acid formed in the gaps between the metal sites. The metalloid compounds will significantly increase the conductivity between the metal sites.

$$[Me\ (OH)_n]^-$$

After the Intensifier step all hydroxides will be eliminated by the acidic rinse, leaving a 60 – 80 ångström thin pure metal alloy layer of Palladium, Tin and the third metal on the hole wall.



SYSTEM-S with flash plated 6 µ J-Plate Cu 400. The ångström thick SYSTEM-S 3-metal amphoteric alloy give outstanding copper penetration and adhesion.



0,15 mm hole > 11:1 Aspect Ratio.
SYSTEM-S with J-Plate Cu 400

FEATURES SYSTEM-S

- Superior conductivity, through hole resistance ≤1ohm.
- Perfect adhesion; produce PTFE without special pretreatment.
- Selective, no barriers and pure copper-to-copper bonding
- Easy to control with wide operating window.
- The only Direct Plating System with perfect result in both vertical and horizontal applications.
- Environmental friendly with no chelators and low water consumption.

PATTERN PLATING

Product	Time	Temp
CONDITIONER DS-270	7 min	65˚C
RINSING		
PREDIP DS-400	30 sec	room temp.
ACTIVATOR DS-500	7 min	42˚C
RINSING		
INTENSIFIER DS-650	4 min	45˚C
RINSING		
SETTER DS-800	2 min	room temp.
RINSING		
DRY		

PANEL PLATING

Product	Time	Temp
CONDITIONER DS-270	7 min	65˚C
RINSING		
PREDIP DS-400	30 sec	room temp.
ACTIVATOR DS-500	7 min	42˚C
RINSING		
INTENSIFIER DS-650	4 min	45˚C
RINSING		
10% H2SO4		
J-PLATE Cu 400		
RINSING		
DRY		

HORIZONTAL

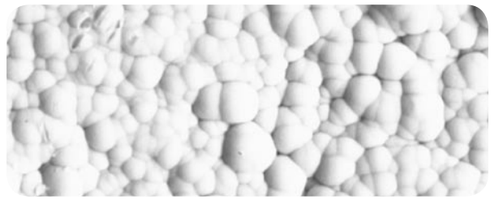
Product	Time	Temp
CONDITIONER DS-280	60 sec	65˚C
RINSING		
PREDIP DS-400	20 sec	room temp.
ACTIVATOR DS-500	70 sec	42˚C
RINSING		
INTENSIFIER DS-650	60 sec	50˚C
RINSING		
REDUCER DS-880	30 sec	25˚C
RINSING		
DRY		

FINAL FINISHING

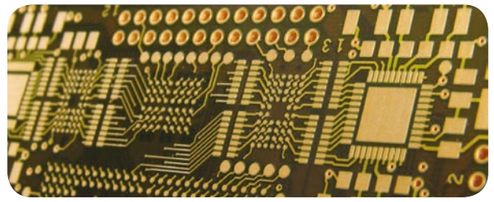
J-KEM ENIG

J-KEM ENIG process provides a reliable solderable and bondable final finish.

- Excellent solderability and bondability
- No skip plating and designed with a black pads reduction formulation.
- No extraneous plating
- Mid-phosphorous electroless nickel with corrosion protection without jeopardising the solderbility and bondability.
- Solder mask friendly process



10 K mag of mid-phosphorous Ni 6000 deposit.



Dense, fine grained even coated 24 carat Au 3000 deposit.

ENIG PROCESS SEQUENCE

Product	Time	Temp
ACID CLEANER 7320	5 min	45°C
RINSING		
MICRO STCH 7227S	2 min	25°C
RINSING		
CATALYST Pd 600	5 min	30°C
PRE / POST DIP		
RINSING		
ELECTROLESS Ni 6000	15-30 min	90°C
RINSING		
IMMERSION Au 3000	10-15 min	90°C
Au DRAG-OUT	1-2 min	
HOT RINSING		60°C
DRYING		

IMMERSION TIN

J-KEM immersion tin offers a reliable and stable process that creates a highly solderable pure tin deposit. The immersion tin meets all requirements of today and is ideally used on PCB´s designed for surface mount and press fit applications.

- Highly solderable pure tin layer.
- Extremely planar deposit.
- Stable process with simple analysis.
- Perfect for both vertical and horizontal applications.
- Low working temperatures.
- Multiple solderability, even after intermediate storage.
- Compatible to lead-free soldering.

Large grain sized and dense packed crystals giving a pure white tin deposition for multiple solderability.

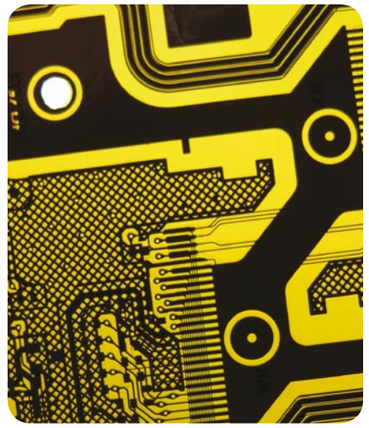
IMMERSION TIN PROCESS SEQUENCE

Step	Process	Time V	Time H	Temp
1	Cleaner 7000	2 min	30-60 sec	40-45°C
2	Rinse			
3	Rinse			
4	Etch 7000	1 min	30-60 sec	20-25°C
5	Rinse			
6	Rinse			
7	PCB 7000	1 min	30-60 sec	20-25°C
8	Rinse			Rec. to use DI water
9	Tin 7000	20 min	12 min	60-65°C
10	Warm rinse			40-60°C
11	Rinse			
12	DI water			Static rinse fully DI < 50µS/cm
13	Dry			

PERIPHERALS PRODUCTS

PERIPHERAL PRODUCTS

J-KEM International has a long the different processes also been developing and fine-tuned the peripheral product groups to ensure full control and highest quality thru the whole manufacturing process.



- **RESIST STRIPPERS**
  - For spray or immersion
  - Minimum attack on tin or tin/lead
  - Oxide free surface
  - High speed stripping at low concentration
  - For aqueous and semi-aqueous dry films

- **TIN STRIPPERS**
  - Single- and two step versions
  - High metal capacity
  - No fluorides, fluoborate, peroxide or chelating agents
  - Ensures a clean surface of pure copper
  - Easy to maintain and control

- **ANTIFOAM**
  - Foam control for resist stripping systems and developing solutions
  - De-foamers for waste water systems

- **ANTITARNISH**
  - Tarnish and oxidation inhibitors for Electroless copper and electrolytic copper systems

- **FLUXES**
  - Superior fluxes designed for lead-free production
  - Outstanding heat protection and activation of copper
  - Low odour and smoke
  - Economical to use

DESMEARING TECHNOLOGY

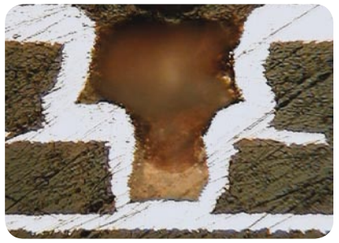
DESMEARING TECHNOLOGY

J-KEM offers the highest quality versatile desmear technology.
The vertical and horizontal processes can be optimised according to different Tg-values and also for flexible PCB production.

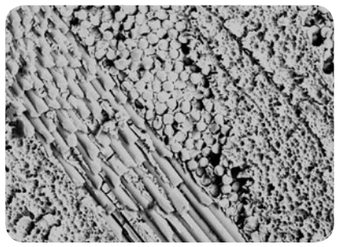
Swell Technology:
- Unique formulations for superior swelling of high Tg material
- Preferred process in SBU technology

Desmear Technology:
- Perfect micro roughness
- Ability to work in a wide temperature range to optimise result depending on different Tg-values
- Maximum copper-copper adhesion

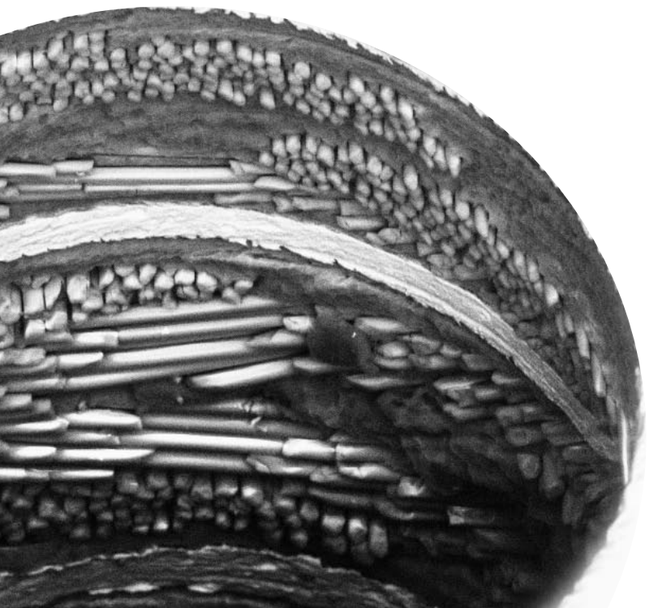
Neutralise Technology:
- Non-etching for three-point connection
- Totally residue free copper surface



Laser drilled micro blind via desmeared with J-KEM horizontal desmearing process. Produced with horizontal SYSTEM-S and plated with J-Plate Cu 90H.



1K mag of perfect micro roughness giving superior adhesion with 0,2µ PEC 750 copper deposition.



HORIZONTAL

Product	Time vertical	Temp. vertical
SWELL 7102 H	90 sec	75°C
WARM RINSING		
DESMEAR 7110 H	150 sec	80°C
RINSING		
NEUTRALISER 7135L-H	50 sec	45°C
RINSING		

VERTICAL

Product	Time vertical	Temp. vertical
SWELL 7100	5 min	65°C
WARM RINSING		
RINSING		
DESMEAR 7110	10 min	75°C
RINSING	30 sec	room temp.
NEUTRALISER 7135 L	2 min	35°C
RINSING		
DRYNG		

TOP BOND OXIDE REPLACEMENT

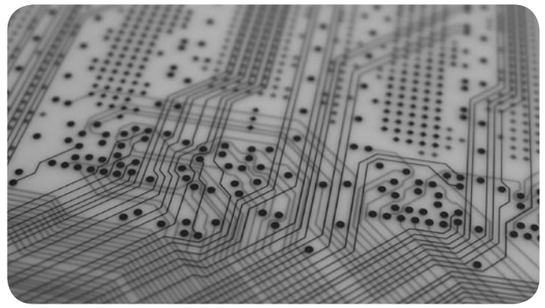
TOPBOND OXIDE REPLACEMENT

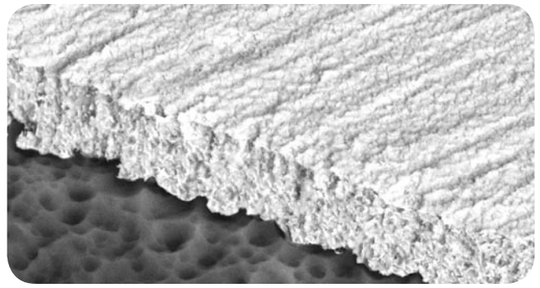
TopBond is an innovative three step Topography modifier and Adhesion promoter for modern multilayer production.

Conditioner 7876: Special formulation with surface active additives which works as topography modifiers.

Predip 7877: Initiate the Organometallic coating.

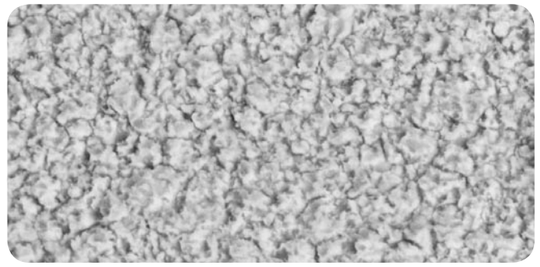
Promoter 7878: Revalutionary chemistry formulated to enhance higher bond strength and excellent resistance to delamination of multi layer PCB´s.





2 K mag of the excellent adhesion promoting with TopBond surface including the side wall.

FEATURES:
- Unique surface active formulation that enhance the modification of the topography.
- Super peel strength on high Tg material
- No pink ring or wedge voids
- Outstanding thermal resistance on high Tg material
- Low temperatures
- Stable result and extremely easy handling
- Perfect for both vertical and horizontal application



4 K mag SEM photo of the organo-metallic copper structure.

TOPBOND PROCESS SEQUENCE

Product	Time vertical	Temp. vertical	Time horizontal	Temp. horizontal
CONDITIONER 7876	3 min	45°C	30 sec	50°C
RINSING				
PREDIP 7877	2 min	room temp.	30 sec	25°C
PROMOTOR 7878	2 min	35°C	60 sec	40°C
RINSING				
DRYING				

L.P.I SOLDERMASK

L.P.I SOLDERMASK

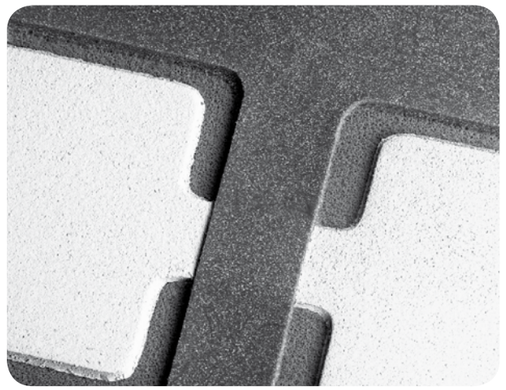
Our range of high performance coatings are formulated to meet the tough requirements from the industry of today. Our imaging product range has been formulated and designed based on several years of research and a genuine experience of PCB manufacturing.

The **ST-500 liquid photo imageable soldermask** serie has been designed for high-density printed circuit boards. Effective processing, with fast developing and low exposure requirements. High chemical- and thermal resistance which makes it highly suitable for Ni/Au and Immersion tin processes.

ST-500 is available for Screen Printing, Air Spray, Curtain Coating and Electrostatic application.

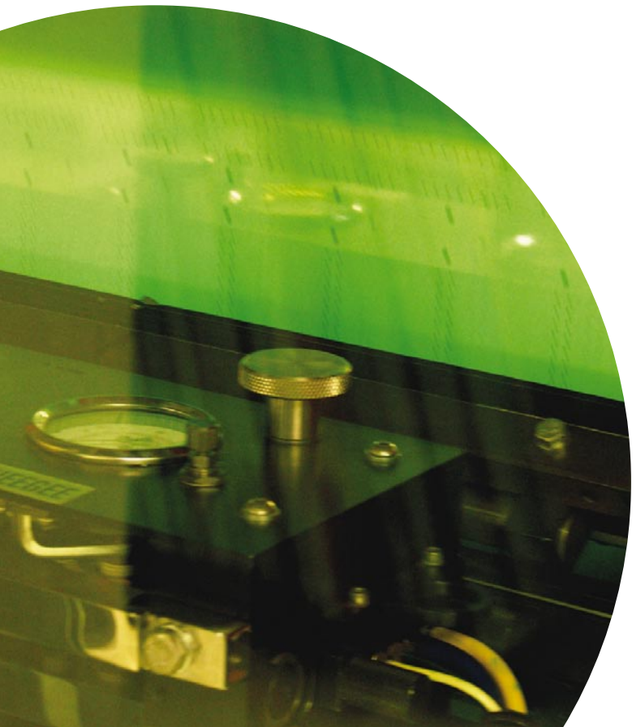
ST-500 serie does not contain TGIC or Isocyanates, it is UL-approved and complies with RoHS directives.

ADVANTAGES
- Fast exposure
- Fast developing
- Screen Print, Air Spray, Curtain Coating or Electrostatic method.
- ENIG and Immersion Tin Compatible
- High definition enables solderdam down to 50 µ.
- Wide process window
- NO TGIC, lead, Isocyanates or halogens.
- UL-approved and complies with RoHS directives

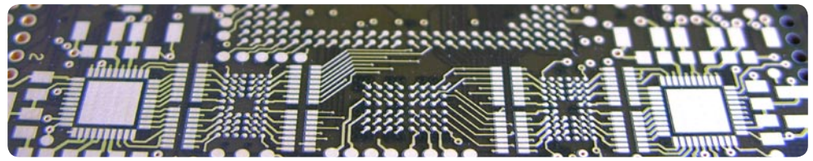


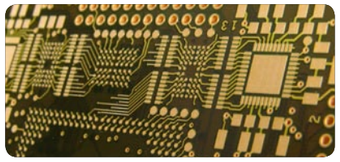
Low requirement of UV-exposure and fast developing, makes a solder-dam of 25 µ possible.

ST-500 is available in different pot sizes.



ST 500 L.P.I. SOLDERMASK





ST 500 is compatible with Ni/Au, Immersion Tin, Silver and Lead Free H.A.S.L

PHYSICAL PROPERTIES

Item	Value	Test Method
1. Hardness	6H	IPC-SM-840C 3.5.1.2 (IPC-TM-650 2.4.27.2)
2. Adhesion	100/100 OK	IPC-SM-840C 3.5.2 (TM 2.4.28.1) Bare copper. Base laminate Gold or Nickel, or tin-lead.
3. Machinability	OK	IPC-SM-840C 3.5.3
4. Flammability	UL 94	IPC-SM-840C 3.6.3
5. Solderability	J-STD-003 OK OK	IPC-SM-840C 3.7.1 Solderability/Resistance to solder (IPC-SM-840C 4.89.1) 490° F ±10° for 10 seconds Soldering / Desoldering (IPC-SM-840C 4.8.9.2)
6. Thermal resistance	OK	H.A.S.L (Pure Tin) 288 °C +/- 5 °C x 10 sec, 5 cycles

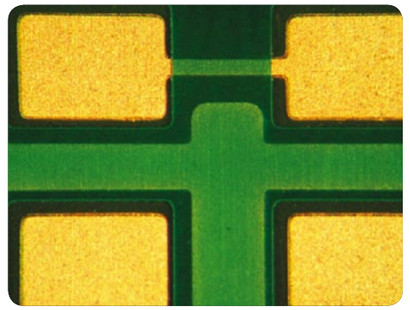
CHEMICAL PROPERTIES

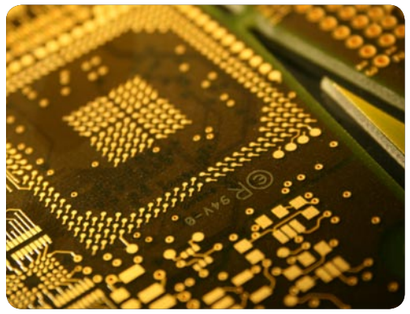
Item	Value	Test Method
1. Solvent Resistance	 OK	IPC-SM840C 3.6.1.1 IPA 120 sec. @ r.t. 75% Isopropanol / 25% Water 15 min @ 46 ± 2 °C D-Limonene 2 min @ r.t. 10% Alkaline detergent pH ≤13 2 min @ 57 ± 2 °C Monoethanolamine 2 min @ 57 ± 2 °C Deionized water 5 min @ 60 ± 2 °C (r.t. = roomtemperature)
2. Chemical Resistance	OK	10 vol% H2SO4 30 min @ roomtemp. 10 vol% HCL 30 min @ roomtemp. 10 vol% NaOH 30 min @ roomtemp.
3. Hydrolytic Stability/ Aging	OK	IPC-SM-840C 3.6.2 CLASS 1:35 °C ± 2 °C 90%RH 4 days. CLASS 2:85 °C ± 2 °C 90%RH 7 days. CLASS 3:97 °C ± 2 °C 90-98%RH 28 days.
4. P.C.T	OK	120 °C 2 atm 5 hrs
5. Stripping after Post cure	OK	10 wt% NaOH 90 ± 5 °C, 15 min.

ELECTRICAL PROPERTIES

Item	Value	Test Method
1. Moisture resistance	1000 V De/mil	IPC-SM 840C 3.8.1 (IPC-TM-650 TM 2.5.6.1) 500 V DC/mil
2. Volumn resistance	15 1 x 10 ohm	ASTM D-257
3. Surface resistance	15 5 x 10 ohm	ASTM D-257
4. Insulation	 11 1 x 10 ohm 11 1 x 10 ohm 11 1 x 10 ohm	IPC-SM-840C 3.9.1 (TM-650 2.6.3.1) Class 1 35 °C, 90%RH, 4 days (static) 8 1 x 10 ohm Class 2 50 °C ,90%RH, 7 days (static) 8 1 x 10 ohm Class 3 25-65 °C, 90%RH, 7 days (cycling) 8 1 x 10 ohm

ADVANTAGES
- High definition enables fine solderdam between SMD pads.
- Superb thixotrophic properties.
- Fast processed with a wide process window.
- High processing reliability.
- Lead-Free compatible.
- High thermal resistance.
- No TGIC, lead, Isocyanates or halogens.
- UL-approved and complies with RoHS directives.





Outstanding chemical and thermal resistance

MULTI LAYER

OXIDE REPLACEMENT: TOP BOND

CONDITIONER 7876	Alkaline cleaner conditioner that is used as an first step in the TOP BOND oxide process.
CONDITIONER 7876H	Alkaline cleaner conditioner that is used in horizontal Top Bond applications.
PREDIP 7877	Specially formulated to protect and maintain Promoter 7878.
PROMOTER 7878	Revolutionary new oxide replacement alternative formulated to promote a superior peel strength of PCB inner layers. Suitable for immersion or flood conveyer application.

OXIDE TECHNOLOGY

CLEANER 7310	Sprayable Acid Cleaner prior to inner layer oxidation.
CLEANER 7320	High performance acid cleaner prior to inner layer oxidation.
MICRO ETCH 7227 S	Microetch to obtain a suitable copper surface.
MICRO ETCH 7228 P	Microetch specially designed to obtain superior adhesion.
BLACK OXIDE 7355	Ready made low temperature oxide process that creates a dense black oxide layer with crystal morphology.
REDUCER 7340	Produces a reduced oxide and a protective coating for brown or black oxide.

PLATING THROUGH HOLES

DESMEAR HOLE PREPARATION

SWELL 7102H	Biodegradable solvent based sweller for horizontal application.
DESMEAR 7110H	Second stage in the three step desmear process. Supplied in two concentrates. Works within a wide temperature window.
SWELL 7100	Solvent swell that eliminates the use of plasma and chromic acid. Low temperature and extremely efficient swelling.
DESMEAR 7110	Removes drill smear and debris. Texture the resin surface for optimum plating result.
NEUTRALISER 7135 L	New formulation permanganate reducer that neutralises and dissolves oxide species of manganese, leaving a residue free surface.

PERFEKTO ELECTROLESS COPPER

Cleaner Conditioner PAC 710 N	Single component alkaline cleaner/conditioner used to prepare printed circuit boards for hole through plating.
Pre Dip PPD 730	Pre dip that is used prior to activator. Increases the receptivity of the substrate, maintains and protects the activator POA 734.
Activator POA 734	Catalyst for electroless copper deposition on non-conductors, specially formulated to activate circuit boards prior to PERFEKTO Electroless Copper baths.
PERFEKTO PEC 660	Controlled initiation low build electroless copper. Remarkable stable and easy to control. The deposit is pink and has a dense, fine grain structure.
PERFEKTO PEC 760	High performance medium build electroless copper, with improved copper deposit adhesion, by the phenomenon of controlled initiation.
PERFEKTO PEC 770	Controlled initiation EDTA based high build electroless copper, that is remarkably stable and easy to control.
PERFEKTO PEC 800	Cyanide free Electroless Copper for EMI Shielding.

PERFEKTO A.C.S ALKALINE CATALYST SYSTEM

CONDITIONER ACS 71	Mild alkaline cleaner/conditioner. Very effective in conditioning both epoxy and glass fibre.
PRE DIP ACS 73	Increase receptivity of hole walls. Prevents drag-in contamination.
CATALYST ACS 74	Fundamental step of the A.C.S Alkaline Catalyst System. Primarily responsible for superior coverage of subsequent electroless copper deposit.
REDUCER ACS 75	Post sensitising solution. Releases catalytic sites on the surface.

DIRECT PLATING: SYSTEM-S

CONDITIONER DS 200	Single component degreaser and conditioner with strong cleaning capacity suitable for double sided production.
CONDITIONER DS 270	Low concentration single component degreaser with high conditioning power for HARB multi layer production.
CONDITIONER DS 280 H	Two component conditioner for horizontal direct metallization.
PRE DIP DS 400	Ready made pre-dip prior to catalyst. Formulated to increase the receptivity of Activator DS-500 on the epoxy-resin substrate.
ACTIVATOR DS 500	Unique three metal colloidal palladium catalyst . Extremely stable with unique properties giving the best conductivity on the market.
DS 500 R	Additive for Activator to maintain tin concentration.

INTENSIFIER DS 650	Convert colloidal palladium in to a mono molecular film of metals. Enhance conductivity, plating performance and innerlayer adhesion.
SETTER DS 800	Fixing the metallic layer to the hole wall and cleaning the copper surface giving SYSTEM-S a selectively deposit.
REDUCER DS 880	Supplied as a powder, that mixed with acid “sets” the catalytic film.
ANTI TARNISH DS 850	Optional oxidation inhibitor of copper. Treated board retains long term conductivity and plating properties.

ELECTROLYTIC PLATING

MICRO ETCH DS 300	Stable ammonium free mild micro etch. High capacity for copper with consistent etch rate. Suitable for Direct Plating SYSTEM-S.
J-PLATE Cu 400	Easily controlled one component bright acid copper bath that creates a highly ductile plated copper. High through hole distribution and exceptional throwing power.
J-PLATE Cu 90H	New and modern two component acid copper especially designed to produce a uniform and bright copper deposition with superior throwing power and distribution performance. Formulated for High Aspect Ratio PCB production.
J-PLATE PPR Cu 8000	Revolutionary two component acid copper for plating at High Current Density under Pulse Periodic Reverse Current. Superior Throwing Power and extremely uniform thickness distribution capabilities. Extremely good metallurgic properties and ductility.
J-PLATE Sn 800	Pure satin tin sulphuric acid based etching resist. Excellent coverage is maintained across a wide current density range.

STRIPPERS

RESIST STRIPPERS

FILM STRIPPER 7400	Additive for butyl glycol based stripper.
FILM STRIPPER 7411	Single additive for caustic to obtain economical stripper.
FILM STRIPPER 7422	High performance single part alkaline stripper. Suitable for application where it is not possible to use a solvent.
FILM STRIPPER 7450	Super concentrated stripper designed to remove alkaline soluble resist on fine pitch printed circuit boards.
ANTIFOAM 1600	Non silicones efficient antifoam perfect in strippers and developing.

TIN/LEAD AND TIN STRIPPERS

STRIPPER TL 510	Ready made single stage nitric acid based stripper with high tin/lead capacity and minimal attack on copper.
STRIPPER 510 X	Concentrate of 510 to produce a low cost tin/lead stripper.
STRIPPER 511	Two step stripper for spray application.
STRIPPER TL 514	High performance, single step chemical stripper for removal of tin with a minimum attack on copper.

SURFACE FINISHING

IR FUSING AND H.A.S.L

HASL FLUX 7510	Water soluble, bromine-free biodegradable, low volatility flux that insures constant result and quality.
HASL FLUX 7516	Water soluble, biodegradable flux, designed especially for SMD boards.
HASL FLUX 7518	Water soluble flux with low acid content. reducing corrosion and ionic contamination.
HASL FLUX 7532	Water soluble flux with a low odour formulation suitable for SMD boards.
HASL FLUX 7575	Probably the best flux on the market for lead free production. Has been developed together with some of the biggest PCB manufacturer of today. Economical to use. Reduced Ionic contamination. Easy to rinse off.
HASL FLUX 7545	High performing water soluble, bromine-free biodegradable totally free rinsing flux that gives an exceptional solder mask protection and activates the smallest SMD pads.

ELECTROLESS Ni / IMMERSION Au

ACTIVATOR Pd 600	Ionic palladium activator prior to electroless nickel. Gives complete catalysation of copper surface with no activation of non conductors.
ELECTROLESS Ni 6000	Stable semi bright electroless nickel phosphorus alloy giving a corrosion resistance deposit.
IMMERSION Au 3000	Replenishable immersion gold giving a perfect flat solderable gold finish for surface mount devices

ANTITARNISH

ANTITARNISH 7756	Monomolecular anti-tarnish layer. Perfect as inter stage anti-tarnish and to act as an adhesion promoter prior to dry film application. Suitable as flat solderable finish for one heat cycle

GOLD PLATING

J-PLATE Au 3022	Au/Co 24 carats acid bath with high output for electronics. Low porosity deposition with a high wear characteristics perfect for gold fingers on PCB.

IMMERSION TIN

CLEANER 7000	The first step in the immersion tin process. Acid solution that removes all copper oxides.
ETCH 7000	Used to obtain an optimum copper structure and promotes the adhesion of the organic metal and immersion tin.
PRE DIP 7000	Unique organic metal eliminates copper diffusion and intermetalic oxidation. Improves solderability and wettability of Sn 7000. Increase the catalysis of the immersion tin deposition.
IMMERSION TIN SN 7000	Protective coating of non-porous fine-grained structure. Homogeneous layer thickness and excellent surface planarity. Easy to control in horizontal and vertical application.

SOLDERMASK

L.P.I. SOLDER MASK ST-500	The ST-500 liquid photo imageable soldermask serie has been developed and designed for high-density printed circuit boards. Effective processing with fast developing and low exposure requirements. High chemical- and thermal resistance which makes it compatible with Ni/Au and Immersion tin processes. ST-500 serie does not contain TGIC or Isocyanates, it is UL-approved and complies with RoHS directives. ST-500 can be applied by Screen Printing, Air Spray, Curtain Coating and Electrostatic application.

J-KEM INTERNATIONAL

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The Leading Technology in PWB Speciality Chemicals

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