TECHNIC INC

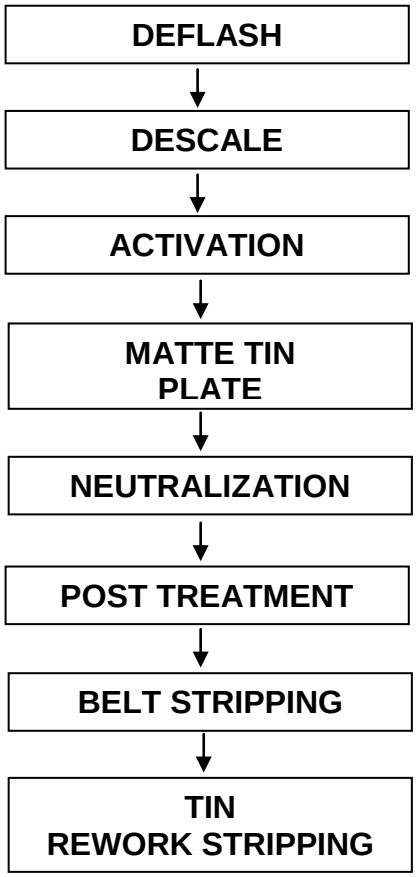
PROCESS APPLICATION GUIDE

ELECTRONIC COMPONENT
HIGH SPEED TIN PLATING

PLEASE NOTE: This document is for guidance only.
Please refer to the appropriate Technical Data Sheet for additional information.

Rev 1215

Process Flow



ELECTRONIC COMPONENT HIGH SPEED TIN PLATING – RECOMMENDED PROCESS SEQUENCE

Process Step	Recommended Process	Description	Process Makeup	Temp.	Current Density	Dwell Time	Recommended Control & Replenishment Schedule	Comments
Deflash	Techni Electro-Deflash #4 **OR**	Electrolytic Deflash	Techni Electro-Deflash #4 Conc: 300 ml/l DI water: balance	43-60°C	4.5-7.5 volts	15-60 sec.	Replenish based on analysis	Alkaline deflash. Requires high pressure water jet after immersion.
	Techni Chemical Deflash 38 **OR**	Immersion Deflash	Techni Chemical Deflash 38 Conc: Use as supplied 100%	80-100°C	NA	3-20 min	Discard when conc falls below 80% by analysis	Supplied as ready to use process.
	Techni Chemical Deflash LT	Immersion Deflash	Techni Chemical Deflash LT: Use as supplied 100%	60-90°C	NA	15-45 min	Discard when conc falls below 80% by analysis	Low temperature version of Techni Chemical Deflash 38.
Descale	Techni ACT 9600 **OR**	Mild descaler	ACT 9600 Salt: Copper alloys: 50 g/l Alloy 42: 150 g/l DI water: balance	18-29°C	NA	20-60 sec	Replenish based on analysis	Acidic, non-foaming, mildly aggressive etch rate (1-3 µ-in/min). Effectively removes oxides & heat scale.
	Techni ACT 5800	Aggressive descaler	Techni ACT 5800 Makeup Salt: Alloy 42: 150 g/l Copper alloys: 50 g/l DI water: balance	18-29°C	NA	20-60 sec	Replenish based on analysis; renew when contaminated	Recommended where a more aggressive etch is required.
Activation	Techni NF Acid	Acid Activation prior to tin plating	Techni NF Acid: 100-200 ml/l DI water: balance	RT-45°C	NA	5-20 sec.	Replenish based on drag-out	Use NF Acid activation prior to Technstan EP or Techni NF JM 6000

Process Step	Recommended Process	Description	Process Makeup	Temp.	Current Density	Dwell Time	Recommended Control & Replenishment Schedule	Comments
Matte Tin Plate	Techni NF JM 8000 **OR**	Matte tin plating process. MSA based electrolyte	Techni Solder NF Acid: 75 ml/l; Techni Solder NF Tin Conc: 216 ml/l; JM 6000 Additive: 40 ml/l; Techni Antioxidant #8: 20 ml/l; DI water: balance (See TDS for makeup of medium and ultra high speed solutions)	40-50°C	10-30 ASD Can also be formulated for medium speed 5-15 ASD and ultra high speed 30-100 ASD	Dependent on deposit thickness requirement ~7.5µm/min @ 15 ASD	Replenish JM 8000 Additive based on analysis.	Medium grained, high speed, pure tin whisker resistant plating process based on MSA. Satisfies all requirements of JEDEC JESD 201.
	Technistan JM 7000	Matte tin, high speed plating process. Sulfate based electrolyte.	Sulfuric Acid: 30 ml/l Technistan Tin Conc: 350 ml/l Technistan JM 7000 Primary: 100 ml/l Technistan JM 7000 Secondary: 20 ml/l Techni Additive C: 30 ml/l Technistan Antioxidant: 20 ml/l DI water: balance	40-50°C	5-40 ASD	Dependent on deposit thickness requirement ~7.5µm/min @ 15 ASD	Replenish based on analysis	High speed process which exhibits minimal tin whisker growth. Also recommended for reflow applications.
Neutralization	Technic PST Neutralizer	Neutralizer/ rinse aid	PST Neutralizer: 20 g/l DI water: balance	45-55ºC	NA	5-20 sec	Replenish based on analysis	Effectively neutralizes acid films from tin plating processes
Post treatment	Tarniban C48 **OR**	Post treatment for tin	Tarniban C48: 20 ml/l DI water: balance	21-30ºC	NA	3-60 seconds	Replenish based on drag-out or UV/VIS analysis	Specifically designed for use on tin deposits which are subjected to post-plate thermal exposure in high humidity/steam environments. For optimal results, Tarniban C48 should be used in combination with Technic PST Neutralizer.

Process Step	Recommended Process	Description	Process Makeup	Temp.	Current Density	Dwell Time	Recommended Control & Replenishment Schedule	Comments
	Tarniban C50		Tarniban C50 Part A: 20 ml/l Tarniban C50 Part B: 200 ml/l DI water: balance	21-30ºC	NA	3-60 seconds	Both components replenished based on drag-out or analysis	Provides protection of tin deposits from discoloration following exposure to high humidity/steam environments plus dry thermal exposure (reflow/oven bake).
	Tarniban E-260	Post treatment for tin and tin/lead deposits	Tarniban E-260: 100 ml/l	25-35°C	NA	3-20 seconds	Replenish based on analysis	Protects tin deposits from discoloration when subjected to thermal conditioning (heat, reflow, etc.)
Belt Stripping	Techni M-16 Tin/lead Stripper **OR**	Immersion belt stripper. Nitric acid based	Nitric acid 284 ml/l; Techni Stripper M-16 Additive FN 500 ml/l DI water: balance	25-35°C	NA	Dependent on thickness	Replenish based on drag-out	Low sludge, low cost stripper. High strip rate (0.33-0.83 µm/second. High solder capacity.
	Techni Strip ELBS	Electrolytic belt stripper. MSA based.	Techni Strip ELBS Makeup: 200 ml/l Di water: balance	30-40°C	<1.5 volts	Dependent on c.d. strip rate = ~5 µm/min @ 10 ASD	Replenish based on drag-out	Specifically designed for efficient stripping of tin, tin/lead and/or nickel deposits from stainless steel.
Tin Rework Stripping	Techni Strip RW	Immersion stripper – Nitric Acid based	Technistrip RW Part A: 900 ml/l Nitric Acid: 100 ml/l	25-35°C	NA	Dependent on thickness	Replace when strip rate is low	Peroxide-free striper. Removes approximately 400 µ-in of tin or tin-lead from copper substrates in 35-40 seconds.

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