CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1995

DateRun: 08/06/1995

Experimenters: Jay Jankauskas

ClientType: Stamping Company

ProjectNumber: Project #1

Substrates: Copper

PartType: Part

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Visual, Wipe

Purpose: Solve problem of the spottin from the last trial

Experimental Procedure: Trials #1 and #2 will use the Oakite Inproclean #3800 in a stir-bar agitated beaker and the Crest ultrasonic unit respectively. Trials #3 and #4 will use the Sky Products cleaner #10 in a stir-bar agitated beaker and the Crest ultrasonic unit respectively.
All cleaners and cleaning methods will use the same times and temperatures. Cleaning will take place for 15 minutes at 130 F. Rinsing will be done in a tank of tap water set at 130 F for two minutes. A second rinse in a DI water bath will be performed for one minute at room temperature. During rinsing the tubes will be agitated quite a bit to make sure they fill up with water. The parts will then be dried under air knives for one minute and then in a convection oven set at 170 F for thirty minutes. For all cleanings and rinsing the tubes will be positioned that the hole side is facing up at a 25-degree angle. If needed the tubes will be agitated enough so that they completely fill up with cleaner or water.
After cleaning the parts will be allowed to cool down and visually inspected for any residual oil. The parts will then be packed away for when Stamping Company arrives on Tuesday.

CLEANING CONDITIONS:

Temperature

	time (min)	trial #1	trial #2	trial #3	trial #4
Stir-bar agitation	15	138		134	
Ultrasonics	15		134		135
RINSE/TAP H_2O	2	128	128	128	132
RINSE/DI H_2O	1	76	76	76	76
DRY air knives	2	room	room	room	room
DRY convection oven	30	172	165	169	171

Results: Parts look very clean on the outside, the ultrasonics more than the agitated immersion. The results for the swab test were the same as Friday's trial.

Summary:

Substrates:	Copper
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Oakite Products	Inproclean 3800	10	0.00	☑	
Sky Products Company Inc	Cleaner #10	10	0.00	☑	

Conclusion: It seems that the Deionized rinse has solved the problem of the spotting.