CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 09/30/2001

Experimenters: Jason Marshall

ClientType: Electronics Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics

PartType: Coupon

Contaminants: Abrasive

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: Evaluating cleaners for removal.

Experimental Procedure: Seven cleaners were selected based on previous trial. Solutions were diluted to 5% using DI water in 250 ml beakers. All solutions were heated to 120 F on a hot plate. Twenty-one preweighed coupons were coated with the supplied slurry using a hand held swab and allowed to dry for 2 hours. These coupons were then weighed again. Three coupons were immersed into each beaker to be cleaned for 5 minutes. After the cleaning, the coupons were rinsed in DI water and dried using air blow off. Coupons were then weighed a final time and percent efficiencies were calculated for each cleaner.

Saint Gobain Industrial Ceramics Water Based Alumina (1344-28-1, 102-71-6)

Results: All seven cleaners removed over 94% of the alumina from the ceramic coupons in the five minutes of cleaning. ND 17 and LPS were the most effective removing just over 97%. The following table lists the calculated efficiencies.

Table 1. Cleaning Efficiencies

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev	Rank
Amberclean	95.40	97.66	90.45	94.50	3.69	5
Micro 90	97.18	95.56	89.58	94.11	4.00	7
LPS	94.91	96.99	100.00	97.30	2.56	2
ND 17	96.68	97.12	98.13	97.31	0.74	1
Inproclean	90.80	97.38	94.54	94.24	3.30	6
Polyspray	97.35	97.06	93.11	95.84	2.37	3
Safety First	96.15	92.91	96.21	95.09	1.89	4

Summary:

Substrates:	Ceramics				
Contaminants:	Abrasive				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Innovative Organics Inc	Amberclean L 12	5	94.50	☑	
International Products Corporation	Micro 90 Conc.	5	94.11	☐	
LPS Laboratories	Precision Clean Concentrate	5	97.30	☑	
MacDermid Industrial Products	ND 17	5	97.31	☑	
Oakite Products	Inproclean 3800	5	94.24	☑	
US Polychem Corporation	Polyspray Jet 790 XS	5	95.84	☑	
Amax Corporation	Safety First	5	95.09	☑	

Conclusion: In order to obtain 100% removal of the contaminant, two simple options could be taken. The first would be to increase the cleaning time and the second would be to use ultrasonic equipment.