CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 08/17/2004

Experimenters: Jason Marshall

ClientType: Jewelry Mfr

ProjectNumber: Project #1

Substrates: Brass

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate products from previous trial using ultrasonic cleaning equipment

Experimental Procedure: Four products from the previous trial were diluted to 5% using DI water in 600 ml beakers and heated to 130F in a Crest 40 kHz ultrasonic tank. The four products were degassed for 10 minutes in the ultrasonic tank.

Twelve preweighed CDA260 brass coupons were contaminated with the Matchless Metal Polishing Company K55-278 Liquid Tripoli buffing compound (1317-85-8) using a hand held swab. Coupons were allowed to sit over night and reweighed to determine the amount of soil added. Three coupons were cleaned in each product for 5 minutes using ultrasonic energy. Coupons were rinsed in tap water for 15 seconds at 120F and dried using air blow off for 30 seconds at 68F. Once the coupons were dry, final weights were recorded and efficiencies were calculated.

Results: Two of the products removed over 85% of the buffing compound using ultrasonic energy. The other two products removed under 70% with the addition of the mechanical energy. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Aquavantage 1440 Gd	0.4298	0.1825	57.54
	0.3664	0.0719	80.38
	0.6614	0.3804	42.49
Inproclean 3800	0.2743	0.0227	91.72
	0.2431	0.0177	92.72
	0.2240	0.0256	88.57
Beyond 2003	0.3246	0.0596	81.64
	0.2077	0.0297	85.70
	0.1549	0.0004	99.74
Polyspray Jet 790 P	0.3228	0.1861	42.35
	0.2187	0.1270	41.93
	0.3236	0.1585	51.02

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	5	60.13	☐	
Oakite Products	Inproclean 3800	5	91.00	☑	
Today & Beyond	Beyond 2003	5	89.03	☑	
US Polychem Corporation	Polyspray Jet 790 P	5	45.10	☐	

Conclusion: The effective products will be used on the second supplied contaminant.