CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 01/31/2007

Experimenters: Jason Marshall

ClientType: Jewelry Mfr

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate three products using ultrasonic cleaning to remove buffing compound

Experimental Procedure: Three products were selected from previous trial based on effectiveness. Each product was diluted to 5% using DI water in 600 ml beakers. Each solution was heated to 130 F in a Branson 3510 ultrasonic tanked filled with water. The solutions were degassed for 5 minutes.

Nine preweighed coupons were coated with Jackonslea Grey Color 305 A (1344-28-1) by heating the buffing compound to facilitate transfer to the stainless-steel coupons. Once cooled, coupons were weighed again to determine the amount of buffing compound applied. Three coupons were cleaned in each solution for 5 minutes using 40 kHz ultrasonic cleaning. Coupons were rinsed for 15 seconds in 120 F tap water and dried using compressed air at room temperature for 30 seconds. Coupons were weighed a third time to determine the amount of soil remaining and efficiencies were calculated for each coupon cleaned.

Results: One product, Detergent 8, removed over 95% of the buffing compound up from 85% from cleaning with immersion. The two others removed over 70%. The table lists the amount of buffing compound applied, the amount remaining after cleaning and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Detergent 8	2.1793	0.1148	94.73
	1.0451	0.0208	98.01
	0.9164	0.0218	97.62
MC 580	1.6800	0.4129	75.42
	1.7418	0.2431	86.04
	1.7951	0.5641	68.58
Polyspray Jet 790 XS	1.7702	0.3367	80.98
	1.5263	0.2592	83.02
	1.5315	0.4558	70.24

Summary:

Substrates:	Stainless Steel
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Alconox Inc	Detergent 8	5	96.79	☑	
Matchless Metal Polish Company	MC 580	5	76.68	☑	
US Polychem Corporation	Polyspray Jet 790 C	5	78.08	☑	

Conclusion: The three products, Detergent 8, MC 530 and Polyspray Jet 790 XS, will be used to clean supplied parts rings using ultrasonic cleaning.