CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 03/07/2007

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Jewelry Mfr

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate semi-aqueous products in an attempt to increase cleaning times.

Experimental Procedure: Eight products were selected from the lab's database, www.cleanersolutions.org, based on past testing effectiveness and compatibility with substrates and equipment. Four products were diluted to 10% using DI water in 600 ml beakers and the other four were used at full strength. Each solution was heated to 130 F on a hot plate.

Twenty-four 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 stir-bar agitation. 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: Seven of the eight products removed over 85% of the buffing compound within 5 minutes of immersion cleaning. Four of these removed over 94%. 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
SC Supersolv	0.2060	0.0459	77.72
	0.2034	0.0012	99.41
	0.4942	0.1112	77.50
Bio T Max	0.2996	0.0151	94.96
	0.2861	0.0105	96.33
	0.1876	0.0165	91.20
Solsafe 245	0.1825	0.0084	95.40
	0.2511	0.0046	98.17
	0.3870	0.0048	98.76
DS 104	0.3846	0.0401	89.57
	0.2890	0.0265	90.83
	0.2447	0.0393	83.94
Optisolv OP7171	0.3434	0.1085	68.40
	0.4844	0.1820	62.43
	0.3385	0.0627	81.48
Optisolv OP7168	0.4535	0.0125	97.24
	0.5022	0.0392	92.19
	0.4792	0.0092	98.08
Soy Gold 2000	0.2434	0.0290	88.09
	0.5075	0.0593	88.32
	0.5400	0.0373	93.09
D Greeze 500 Lo	0.4888	0.0161	96.71
	0.5350	0.0185	96.54
	0.6353	0.0103	98.38

Summary:

Substrates:	Stainless Steel				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Gemtek Products		10	84.88	☑	

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	SC Supersolve Safety Solvent				
Bio Chem Systems	Bio T Max	100	94.16	☑	
Bio Chem Systems	Solsafe 245	100	97.44	☑	
Dysol	DS 104 Wipe Solvent	100	88.11	☑	
Kyzen Corporation	Optisolv OP7171	10	70.11	☐	
Kyzen Corporation	Optisolv OP7168	10	95.84	☑	
AG Environmental Products	Soy Gold 2000	10	89.83	☑	
Transene Company, Inc.	D Greeze 500 LO	100	97.21	☑	

Conclusion: The seven effective products will be tested at shorter times using ultrasonic energy.