CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2004
DateRun:	08/22/2004
Experimenters:	Jason Marshall
ClientType:	Jewelry Mfr
ProjectNumber:	Project #1
Substrates:	Brass
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate drop in replacement solvents for TCE in removing buffing compound.
Experimental Procedure:	Sixteen products were selected from the laboratory's database of test results based on client specific information. Each product was used at full strength in 250 ml beakers at room temperature. Forty-eight preweighed CDA260 Brass coupons were coated 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 overnight and weighed a second time to determine the amount of soil added to each coupon. Three coupons were cleaned in each product for 5 minutes with no agitation. Coupons were air dried at room temperature. Once coupons were dry, final weights were recorded and efficiencies were calculated.
Results:	Four of the sixteen products removed over 75% of the buffing compound in the five minutes of room temperature soaking. Another four removed over 63% and three removed over 55% of the buffing compound. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
AK 225	0.6983	0.6266	10.27
	0.2376	0.1905	19.82
	0.3403	0.2727	19.86
CCA	0.2445	0.1164	52.39
	0.2430	0.1090	55.14
	0.2668	0.1052	60.57
MCA	0.3134	0.1474	52.97
	0.3613	0.1695	53.09
	0.2837	0.0826	70.88
Heavy Duty C	0.3338	0.1694	49.25
	0.2587	0.1341	48.16
	0.3803	0.2097	44.86
Flux Remover C	0.2879	0.0968	66.38
	0.4980	0.2324	53.33
	0.2381	0.0706	70.35
HFE 7100	0.2726	0.2687	1.43
	0.3541	0.3350	5.39
	0.3045	0.2972	2.40
HFE 71DE	0.4460	0.2445	45.18
	0.3428	0.1255	63.39
	0.2119	0.0631	70.22
HFE 7200	0.4060	0.3934	3.10
	0.5930	0.5733	3.32
	0.3123	0.3079	1.41
Ensolv	0.3454	0.0899	73.97
	0.2464	0.0545	77.88
	0.3096	0.0672	78.29
Ensolv A	0.4083	0.1541	62.26
	0.4395	0.1330	69.74
	0.4287	0.1461	65.92

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Lenium CP	0.1554	0.0954	38.61
	0.3560	0.2557	28.17
	0.2719	0.1328	51.16
Lenium ES	0.3629	0.0566	84.40
	0.2583	0.0308	88.08
	0.2802	0.0471	83.19
Lenium GS	0.2393	0.0342	85.71
	0.4664	0.1420	69.55
	0.4294	0.2016	53.05
Metalnox M6960	0.3864	0.1070	72.31
	0.3407	0.0487	85.71
	0.3839	0.0616	83.95
Solvon PB	0.4200	0.1062	74.71
	0.2570	0.0648	74.79
	0.2187	0.0282	87.11
Solvon IP	0.3878	0.1355	65.06
	0.6035	0.2438	59.60
	0.4632	0.1589	65.70

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
AGA Chemical	AK 225	100	16.65	☐	
DuPont	Vertrel CCA	100	56.04	☐	
DuPont	Vertrel MCA	100	58.98	☐	
Chem Free Corporation	SW-2 Heavy Grease Formula	100	47.42	☐	
Micro Care	Flux Remover C	100	63.35	☑	
3M	HFE 7100	100	3.07	☐	
3M	HFE 71DE	100	59.60	☐	
3M	HFE 7200	100	2.61	☐	
Enviro Tech International Inc	Ensolv	100	76.72	☑	
Enviro Tech International Inc	Ensolv A	100	65.97	☑	
Petroferm Inc	Lenium CP (no longer available)	100	39.31	☐	
Petroferm Inc	Lenium ES	100	85.22	☑	
Petroferm Inc	Lenium GS	100	65.44	☑	
Kyzen Corporation	Metalnox M6960	100	80.66	☑	
Poly Systems USA Inc	Solvon Kreussler PB	100	78.87	☑	
Poly Systems USA Inc	Solvon Kreussler IP	100	63.45	☑	

Conclusion: The eight products that removed over 60% of the contaminant will be used in the next trial using the second supplied contaminant.