CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 05/04/2004

Experimenters: Jason Marshall

ClientType: Jewelry Mfr

ProjectNumber: Project #2

Substrates: Sterling/Silver

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate successful products on third supplied contaminant

Experimental Procedure: Nine products were selected based on success in previous two trials. Each product was used at full strength in a 250 ml beaker and heated to 96 F on a hot plate. Twenty-seven preweighed silver plated copper coupons were coated with the Lanson Oil Co Vanish 6912 (6742-48-9) using a hand held swab. Coupons were weighed a second time to determine the amount of soil added to each coupon. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. After cleaning parts were weighed a final time and efficiencies were calculated.

Results: Eight of the products removed over 80% of the soil within five minutes. Five of the nine products removed over 90%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
HFE 7100	0.0377	0.0013	96.55
	0.0396	0.0021	94.70
	0.0496	0.0024	95.16
HFE 7200	0.0962	0.0505	47.51
	0.0378	0.0027	92.86
	0.0221	0.0007	96.83
AK 225	0.0191	0.0046	75.92
	0.0361	0.0065	81.99
	0.0484	0.0035	92.77
Vertrel CCA	0.0461	0.0020	95.66
	0.0149	0.0014	90.60
	0.0689	0.0022	96.81
Ensolv	0.1084	0.0043	96.03
	0.0444	0.0048	89.19
	0.0516	0.0043	91.67
Ensolv A	0.0143	0.0050	65.03
	0.0450	0.0052	88.44
	0.0345	0.0046	86.67
Metalnox M6760	0.0387	0.0045	88.37
	0.0410	0.0036	91.22
	0.0146	0.0045	69.18
Solvon PB	0.0549	0.0011	98.00
	0.0275	0.0024	91.27
	0.0220	0.0022	90.00
Solvon IP	0.0490	0.0023	95.31
	0.0489	0.0029	94.07
	0.0431	0.0042	90.26

Summary:

Substrates:	Sterling/Silver				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
3M	HFE 7100	100	95.47	☑	

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3M	HFE 7200	100	79.06	☐	
AGA Chemical	AK 225	100	83.56	☑	
DuPont	Vertrel CCA	100	94.36	☑	
Enviro Tech International Inc	Ensolv	100	92.30	☑	
Enviro Tech International Inc	Ensolv A	100	80.05	☐	
Kyzen Corporation	Metalnox M6960	100	82.92	☑	
Poly Systems USA Inc	Solvon Kreussler PB	100	93.09	☑	
Poly Systems USA Inc	Solvon Kreussler IP	100	93.21	☑	

Conclusion: The products removing over 82% of the contaminant will be used on the fourth supplied soil.