CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 12/13/1999

Experimenters: Jason Marshall

ClientType: Medical Instrument Mfr

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods:

Analytical Methods: Gravimetric

Purpose: To identify alternative products for perchloroethylene

Experimental Procedure: Seven cleaning chemistries were selected based on vendor supplied information and searching the lab's Effective Test Conditions Database. Five of these products were diluted to five percent and one to two percent by volume in 600 ml beakers using DI water. These six solutions were heated to 130 F on a hot plate. The seventh product was used at full strength at room temperature. Table 1 lists the products evaluated. Twenty-one preweighed stainless steel coupons were coated with the buffing compound and dried for 30 minutes at room temperature and weighed again. (Note: The six contaminants provided were sub-grouped according to their make up. There were three Aluminum Oxide based buffing compounds, two mineral oil based products and one other. Separate testing will be performed according to these classifications.)

Three coupons were cleaned for three minutes in a beaker using stir bar agitation. Coupons were rinsed in DI water at 130 F for 30 seconds and dried using a Master Appliance Corp, Hot-air gun model HG-301A at 500 F for one minute. After the coupons cooled to room temperature, a final clean weight was recorded and cleaning efficiencies were calculated.

SUBSTRATE MATERIAL: Stainless steel coupons (202-316 B-80)
CONTAMINANTS: Buffing Compound (Jackson-Lea abrasive polishing & buffing compound, LTPL-22A)
CONTAMINATING PROCESS USED: Coupons covered with buffing compound and air dried for 30 minutes.

Results: All seven products were very effective in removing the buffing compound from the coupons. One observation made during the testing of the Safe Science product was that most of the contaminant was removed during the rinsing portion. All other solutions removed the buffing compound while immersed in the cleaning solution. These six product were noted to require less than two minutes for cleaning. Table 2 lists the cleaning efficiencies calculated for this trial.

Table 2. Cleaning Results

	Safe Science	Oakite	Texo Corp	US Polychem	Valtech	WR Grace	International
Coupon 1	99.45	99.88	99.76	101.34	100.14	99.52	100.07
Coupon 2	99.35	99.88	99.78	100.06	100.09	100.12	100.76
Coupon 3	98.53	100.10	100.23	100.09	100.00	100.00	100.27
Average	99.11	99.95	99.92	100.5	100.08	99.88	100.37

Summary:

Substrates:	Stainless Steel				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Safe Science Inc	Safe Science Engine Degreaser (Industrial)	100	99.11	☑	
Oakite Products	Inproclean 3800	5	99.95	☑	
Texo Corporation	Texolite 1734 XL	5	99.92	☑	
US Polychem Corporation	Polychem A 2000 XS	5	100.50	☑	
Valtech Corporation	Valtron SP 2250 2LF	5	100.08	☑	
Magnaflux	Daraclean 282 GF	5	99.88	☑	
International Products Corporation	Micro 90 Conc.	2	100.37	☑	

Conclusion:

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The same seven products will be evaluated on the additional contaminant groupings.