CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2000

DateRun: 01/31/2000

Experimenters: Jason Marshall

ClientType: Mfr Boating Accessories

ProjectNumber: Project #2

Substrates: Brass

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods:

Analytical Methods: Gravimetric

Purpose: To identify a low or non voc cleaner for the removal of oil from brass materials.

Experimental Procedure: Eight cleaners were selected the lab's database of effective testing and Industrial Cleaning Survey: Directory of Vendors 4th edition. Six solutions were diluted with DI water to five percent by volume in a 600 ml beaker. The other two products were diluted to 10% as suggested by the vendor. Twenty-four preweighed coupons were coated with the supplied oil and weighed again. Three coupons were cleaned in a solution for five minutes at room temperature using stir-bar agitation. After cleaning the coupons were rinsed for 15 second in tap water at 120 F and allowed to air dry for two hours. Following the drying, final clean weights were recorded and efficiencies were calculated.

SUBSTRATE MATERIAL: Brass Coupons
CONTAMINANTS: Oil-Texaco Lubricant Company Cleartex D (CAS#: 64742-65-0, 68527-02-6)
CONTAMINATING PROCESS USED: Coupons were coated with oil using a hand held swab.

Results: Three cleaners, Chrisal, SWR Corp & Oakite, were capable of removing over 70% of the oil from the brass coupons at room temperature. Two solutions, Valtech and Envirosolutions, removed about 67% and the remaining solutions cleaned less than 55% of the contaminant. Table 2 lists the calculated efficiencies for each solutions evaluated.

Table 2. Room Temperature Cleaning

Cleaner	Alconox	Chrisal	Savorgran	SWR Corp	Valtech	C&D	Oakite	Envirosolutions
Coupon 1	53.18	87.69	52.58	73.79	66.42	45.85	83.32	60.72
Coupon 2	58.18	87.42	40.81	71.67	63.08	56.24	71.19	65.98
Coupon 3	44.70	73.58	50.42	68.30	70.15	60.67	80.71	76.39
Average	52.02	82.90	47.94	71.25	66.55	54.25	78.41	67.70

Summary:

Substrates:	Brass				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Church & Dwight Co Inc.	Armakleen E 2002	5	54.25	☐	
Bio Chem Systems	Bio T Max	10	67.70	☐	
Oakite Products	Inproclean 4000 T	10	78.41	☑	
Valtech Corporation	Valtron SP 2250 2LF	5	66.55	☐	
SWR Corporation	SWR One	5	71.25	☑	
Chrisal USA Inc	Super CMF 240	5	82.90	☑	
Alconox Inc	Luminox	5	52.02	☐	
Savogran Company	Dirtex Prepaint Cleaner	5	47.94	☐	

Conclusion: Since most of the cleaners selected removed a majority of the contaminant while at room temperature, an additional test will be performed using all cleaners heated to 130 F.