CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	07/13/2010
Experimenters:	Heidi Wilcox, Timothy Weil
ClientType:	Metal Working
ProjectNumber:	Project #1
Substrates:	Brass
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds
Cleaning Methods:	Ultrasonics
Analytical Methods:	Gravimetric
Purpose:	To determine then difference in effectiveness of eight different cleaners using the predefined cleaning method.
Experimental Procedure:	Twenty-four brass coupons were cleaned, dried and weighed. The 24 coupons were then coated with Formax Manufacturing Corporation Blue Moon Chrome Rouge buffing compound (CAS 1344-28-1), allowed to dry and then weighed again. The coupons were separated into eight groups of three, one for each cleaning solution. Eight products were selected from previous trial based on effectiveness. All products were diluted to 5% using DI water in 500 ml beakers. Each solution was heated to 120° on a Thermolyne heat plate (Type 2200). The solutions were then agitated using ultrasonic for 5 minutes at 120° F in a Branson 2510 ultrasonic cleaner (Model 2510-DTHa) tank filled with water. Three Brass Coupons coated with a client provided buffing compound were cleaned in each solution for five minutes intervals using ultrasonic cleaning. Coupons were rinsed for 30 seconds in tap water at room temperature and dried using heated air.
Results:	All eight products worked in under five minutes of cleaning. The table below lists the amount of buffing compound added, the amount remaining after cleaning and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Daraclean 283			
	0.4105	-0.0039	100.95
	0.1663	-0.0041	102.47
	0.1608	-0.0042	102.61
Polyspray 790 XS			
	0.2385	0.0044	98.16
	0.1582	-0.0050	103.16
	0.2603	0.0062	97.62
Detergent 8			
	0.3163	-0.0013	100.41
	0.6033	-0.0032	100.53
	0.3903	-0.0019	100.49
Buffclean 125 L			
	0.3222	-0.0084	102.61
	0.4996	-0.0081	101.62
	0.4259	-0.0043	101.01
Micro 90			
	0.5170	0.0024	99.54
	0.4307	0.0188	95.64
	0.2590	-0.0026	101
Shopmaster HP			
	0.4155	0.1458	64.91
	0.5844	-0.0031	100.53
	0.2237	0.0035	98.44
Inproclean 3800			
	0.4271	0.0125	97.07
	0.3031	0.0001	99.97
	0.5504	0.0155	97.18

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Buffclean 14 L			
	0.3220	0.0178	94.47
	0.2979	-0.0036	101.21
	0.3875	-0.0013	100.34

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Magnaflux	Daraclean 283	5	102.01	☑	
US Polychem Corporation	Polyspray Jet 790 XS	5	99.64	☑	
Alconox Inc	Detergent 8	5	100.48	☑	
Matchless Metal Polish Company	Buffclean 125 L	5	101.75	☑	
International Products Corporation	Micro 90 Conc.	5	98.72	☑	
Buckeye International	Shopmaster HP	5	87.96	☑	
Oakite Products	Inproclean 3800	5	98.07	☑	
Matchless Metal Polish Company	Buffclean 14L	5	98.67	☑	

Conclusion: All solutions were successful in removing the buffing compound.