CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 09/11/2006

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Brass

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To compare current cleaning alternative with other products.

Experimental Procedure: Four alternative products were selected from the lab's database of testing results based on supplied client information. Products were selected based on buffing compound removal potential and compatibility with brass metal substrates. Each product was diluted to 5% in 250 ml beakers using DI water and heated to 150 F in a Branson 3510 ultrasonic tank. The client's current cleaning product also was diluted to 5% and heated to 150F.

Fifteen preweighed coupons were coated with the brown buffing compound using a handheld swab. Coupons were weighed a second time to determine the amount of buffing compound added. Three coupons were cleaned in each solution for one minute using 40 kHz ultrasonic energy. Coupons were rinsed for 15 seconds in a tap water bath at 120 F and dried using heated air (300F) for 60 seconds. Once dry coupons were weighed a final time and product efficiencies were calculated.

Results: All four alternatives removed more than the current cleaning product being used to remove the brown buffing compound with ultrasonic energy. Three of the four removed over 98% of the compound. The following table lists the amount of buffing compound applied, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
MC 132	0.2734	-0.0001	100.04
	0.2659	0.0001	99.96
	0.4031	0.0000	100.00
Polyspray Jet 790 XS	0.2325	0.0010	99.57
	0.1683	0.0003	99.82
	0.1760	-0.0002	100.11
Daraclean 283	0.2834	0.0471	83.38
	0.1968	0.0004	99.80
	0.1581	0.0014	99.11
Gillite 0650 CI	0.1153	0.0011	99.05
	0.2065	0.0045	97.82
	0.1750	0.0024	98.63
Clean All 36	0.2610	0.0153	94.14
	0.1318	0.0089	93.25
	0.2100	0.0143	93.19

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Matchless Metal Polish Company	MC 132	5	100.00	☑	
US Polychem Corporation	Polyspray Jet 790 XS	5	99.84	☑	
Magnaflux	Daraclean 283	5	94.10	☑	
Man Gill Chemical Company	Gillite 0650 CI	5	98.50	☑	
JacksonLea	Cleanol CS 336	5	93.53	☑	

Conclusion: With several of the products successful for the removal of the buffing compound, the next step will be to evaluate these cleaners on supplied parts at or after workshop.

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