CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 09/07/2006

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Brass

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate selected alternatives for cleaning the supplied buffing compound from brass. Compare results with supplied alternative cleaning product

Experimental Procedure: Six 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. A seventh product was supplied by the client for comparison. Each product was diluted to 5% in 250 ml beakers using DI water and heated to 130 F on a hot plate.

Twenty-one preweighed coupons were coated with the grey buffing compound. The compound was heated to melting so that a handheld swab could spread the compound across the coupons. Coupons were weighed a second time to determine the amount of buffing compound added. Three coupons were cleaned in each solution for five minutes using minimal stir bar agitation. Coupons were rinsed for 15 seconds in a tap water bath at 120 F and dried using a dry compressed air for 30 seconds. Once dry coupons were weighed a final time and product efficiencies were calculated.

Results: Three products removed over 95% of the buffing compound during the 5 minutes of immersion cleaning. 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	0.1287	0.0002	99.84
	0.1525	0.0020	98.69
	0.1283	0.0065	94.93
Polyspray Jet 790 XS	0.1986	0.0106	94.66
	0.2059	0.0023	98.88
	0.1438	0.0063	95.62
Detergent 8	0.1015	0.0001	99.90
	0.1717	0.0003	99.83
	0.1667	0.0002	99.88
ND 17	0.0989	0.0321	67.54
	0.1554	0.0300	80.69
	0.2467	0.1095	55.61
FO 2085 M	0.4065	0.2039	49.84
	0.2086	0.0313	85.00
	0.2441	0.0458	81.24
Aquacleen	0.2445	0.2433	0.49
	0.1909	0.1328	30.43
	0.2942	0.2936	0.20
Current Alt.	0.2585	0.0858	66.81
	0.1590	0.0250	84.28
	0.2482	0.0191	92.30

Summary:

Substrates:	Brass				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Matchless Metal Polish Company	MC 132	5	97.82	☑	

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US Polychem Corporation	Polyspray Jet 790 XS	5	96.39	☑	
Alconox Inc	Detergent 8	5	99.87	☑	
MacDermid Industrial Products	ND 17	5	67.95	☐	
Fine Organic Corporation	FO 2085 M	5	72.02	☐	
Hubbard Hall Inc	Aquacleen	5	10.38	☐	

Conclusion: Three products were found to work on the supplied buffing compound. Cleaning with ultrasonic energy will increase the effectiveness of the products especially when dealing with intricate parts. With the products successful on the buffing compound, the next step will be to evaluate these cleaners on supplied parts at or after workshop.