CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2005
DateRun:	10/19/2005
Experimenters:	Jason Marshall
ClientType:	Metal Finishing
ProjectNumber:	Project #1
Substrates:	Brass
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate client supplied aqueous cleaner on three buffing compounds.

Experimental Procedure:

The supplied product was used at the client's current concentration of 20%. The product was diluted with DI water and heated to 130 F on a hot plate. A 250 ml beaker was filled with the product and placed on a stir plate.
Three preweighed 260 Brass coupons were coated with the Mosher Company Inc Moco Steel Cut #2318 (68425-50-2, 555-43-1, 57-11-4, 26635-92-7, 1344-28-1) buffing compound. Three other brass coupons were coated with the Matchless

Metal Polishing Co Z-66 (1344-28-1) buffing compound. A final three coupons were coated with the brown buffing compound.

Each compound was applied by heating the coupons and the buffing compound with a Master Appliance Heat Gun. The hot buffing compound was rubbed across the surface. Coupons were allowed to cool to room temperature and weighed a second time to determine the amount of contaminant applied. Three coupons were cleaned in each product for 5 minutes using stir-bar agitation. After cleaning, the parts were rinsed for 15 seconds in 120 F tap water bath and then dried for 30 seconds using dry, compressed air at room temperature. Once dry, final weights were recorded and efficiencies were calculated for each product.

Results:

The Ultrasoak 127 was very effective at removing the Moco buffing compound, removing over 90%. The product was able to clean about 85% of the Z-66 compound. The cleaner only removed about 40% of the third buffing compound. The first table below lists the amount of soil added, the amount remaining and the average efficiency for each coupon cleaned with Ultrasoak 127. The second table lists the top three performers from the previous aqueous cleaning trials.

Buffing Compound	Initial wt	Final wt	% Removed
Mocha	0.1536	0.0051	96.68
	0.2170	0.0285	86.87
	0.1151	0.0012	98.96
Z-66	0.2675	0.0049	98.17
	0.6835	0.1829	73.24
	0.3064	0.0542	82.31
Brown	0.7384	0.3635	50.77
	1.1218	0.7766	30.77
	1.4870	0.9301	37.45

Previous Testing Results

Product	Moco	Z-66	Brown (comparable)
Formula 815 GD	82.15	60.63	56.57
MC 132	98.96	68.48	90.08
Texolite 1740 XL	81.33	52.81	52.45

The Ultrasoak 127 was equal to or better at removing Moco and Z-66 buffing compounds but less effective on the brown compound. The other aqueous products were all tested at lower concentrations and may have similar results to Ultrasoak 127 if used at comparable concentrations.

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Hubbard Hall Inc	Ultrasoak 127	20	94.17	☑	Moco
Hubbard Hall Inc	Ultrasoak 127	20	84.57	☑	Z-66
Hubbard Hall Inc	Ultrasoak 127	20	39.67	☐	Brown

Conclusion: The client supplied product was effective at removing 2 of the three buffing compounds within 5 minutes of cleaning at 20% concentration.