CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 09/20/2005

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 successful aqueous cleaners on second buffing compound.

Experimental Procedure: Four products were selected from the lab's previous test results based on performance. Each product was used at 5% diluted with DI water and heated to 130 F on a hot plate. A 600 ml beaker was filled with each product and placed on a stir plate.

Twelve preweighed 260 Brass coupons were coated with the Matchless Metal Polishing Co Z-66 (1344-28-1) buffing compound. The 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: Two of the products removed over 60% of the buffing compound after 5 minutes of immersion cleaning. All four products would benefit from using ultrasonic energy. The table below lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Formula 815 GD	0.3424	0.1906	44.33
	0.2937	0.0998	66.02
	0.2716	0.0773	71.54
Micro 90	0.5382	0.4110	23.63
	0.7646	0.4603	39.80
	0.4170	0.2252	46.00
MC 132	0.2454	0.0661	73.06
	0.5378	0.1819	66.18
	0.5132	0.1735	66.19
Texolite 1740 XL	0.4581	0.2780	39.31
	0.2249	0.0821	63.49
	0.1674	0.0743	55.62

The aqueous cleaners were not as effective as the drop-in solvents; however, the efficiencies for the top two aqueous cleaners were almost as effective. The table below lists the drop-in solvent efficiencies.

Drop-in Solvent Results
Product Efficiency

Ak 225	53.31
Ensolv	68.44
CCA	67.1
MCA	61.7
Lenium ES	68.44
Solvon IP	71.48
Solvon PB	63.89

Summary:

Substrates:	Brass				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Formula 815 GD	5	60.63	☑	

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International Products Corporation	Micro 90 Conc.	5	36.48	☐	
Matchless Metal Polish Company	MC 132	5	68.48	☑	
Texo Corporation	Texolite 1734 XL	5	52.81	☐	

Conclusion: The top three aqueous products will be evaluated for removing the third buffing compound under similar conditions.