CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 09/04/2006

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 reevaluate successful products on second supplied contaminant using ultrasonic cleaning.

Experimental Procedure: Five products from the previous were diluted to 5% in 250 ml beakers using DI water and immersed in a hot water bath at 130 and degassed for five minutes in a Branson 3510 ultrasonic unit.

Fifteen preweighed coupons were coated with the red buffing compound that was heated to melting so that a handheld swab could be used to spread the compound onto 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 40 kHz ultrasonic 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: All products showed increased effectiveness with the addition of ultrasonic energy. The Detergent 8 removed over 95% of the buffing compounds. MC 132 and Polyspray Jet 790 XS removed over 65% after five minutes of cleaning. The other two products still removed under 60% of the buffing 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	0.4225	0.1899	55.05
	0.3183	0.1022	67.89
	0.3273	0.0906	72.32
Polyspray Jet 790 XS	0.3582	0.1254	64.99
	0.2877	0.1183	58.88
	0.1709	0.0292	82.91
Daraclean 283	0.2392	0.0637	73.37
	0.2545	0.0781	69.31
	0.6629	0.4455	32.8
Gillite 0650 Cl	0.3093	0.0898	70.97
	0.2662	0.117	56.05
	0.4572	0.2748	39.9
Detergent 8	0.2901	0.0019	99.35
	0.6882	0.0822	88.06
	0.2827	0.002	99.29

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Matchless Metal Polish Company	MC 132	5	65.09	☑	
US Polychem Corporation	Polyspray Jet 790 XS	5	68.93	☑	
Magnaflux	Daraclean 283	5	58.49	☐	
Man Gill Chemical Company	Gillite 0650 Cl	5	55.64	☐	
Alconox Inc	Detergent 8	5	95.56	☑	

Conclusion: The three products that removed over 65% of the buffing compound will be tested on the third supplied buffing compound. In addition, the Detergent 8 will be tested on the first supplied buffing compound.