CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 08/17/2006

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 evaluate previously tested products using ultrasonic energy.

Experimental Procedure: Four products from the previous trial were diluted to 5% in 250 ml beakers using DI water and heated to 130 F in a Brason 3510 ultrasonic tank and degassed for 5 minutes.

Twelve preweighed coupons were coated with the green buffing compound using a hand held swab after heating to its melting point with a heat gun. 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: Ultrasonic cleaning improved the efficiency for two of the four products tested. Both Daraclean 283 and Polyspray Jet 790 XS removed 70 and 86% of the buffing compound after five minutes of ultrasonic 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
Daraclean 283	0.2243	0.0117	94.78
	0.3470	0.1031	70.29
	0.5817	0.3084	46.98
Inproclean 3800	0.5119	0.3280	35.92
	0.1132	0.0004	99.65
	0.6942	0.3628	47.74
Beyond 2001	0.4965	0.1676	66.24
	0.5220	0.2934	43.79
	0.4332	0.1706	60.62
Polyspray Jet 790 XS	0.1408	0.0040	97.16
	0.3748	0.0503	86.58
	0.8823	0.2177	75.33

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Magnaflux	Daraclean 283	5	70.68	☑	
Oakite Products	Inproclean 3800	5	61.10	☐	
Today & Beyond	Beyond 2001	5	56.89	☐	
US Polychem Corporation	Polyspray Jet 790 XS	5	86.35	☑	

Conclusion: Longer cleaning times or increased temperature should improve cleaning efficiency for the top two cleaners. These cleaners will be used on the next supplied buffing compound.