

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006
 DateRun: 08/22/2006
 Experimenters: Jason Marshall
 ClientType: Metal Working
 ProjectNumber: Project #1
 Substrates: Copper
 PartType: Coupon
 Contaminants: Oil
 Cleaning Methods: Ultrasonics
 Analytical Methods: Gravimetric

Purpose: To evaluate products for oil removing using ultrasonic cleaning.

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

Six preweighed coupons were coated with the supplied oil using a handheld swab. 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: Both products removed over 85% of the oil using ultrasonic energy. The table below lists the amount of buffing compound added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Daraclean 283	0.1556	0.0256	83.55
	0.2412	0.0156	93.53
	0.3283	0.0180	94.52
Polyspray Jet 790 XS	0.4437	0.0340	92.34
	0.2028	0.0417	79.44
	0.3201	0.0457	85.72

Summary:

Substrates:	Copper				
Contaminants:	Oil				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Magnaflux	Daraclean 283	5	90.53	<input checked="" type="checkbox"/>	
US Polychem Corporation	Polyspray Jet 790 XS	5	85.83	<input checked="" type="checkbox"/>	

Conclusion: With both products successful on the buffing compound and oil, the next steps will be to evaluate these cleaners on supplied parts at or after workshop.