CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	06/18/2008
Experimenters:	Jason Marshall, Shweta Bansal
ClientType:	Tool Manufacturer
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids
Cleaning Methods:	Ultrasonics
Analytical Methods:	Gravimetric
Purpose:	To evaluate additional products using ultrasonic energy on the first supplied soil.
Experimental Procedure:	Four products were selected from the lab's on-line database, www.cleanersolutions.org, based on supplied information from client. Four from the previous trial were selected on performance on the supplied soil. Each product was diluted to 5% using DI water in 600 ml glass beakers. Solutions were heated to 130 F on immersed in a heat bath in a Branson 40 kHz ultrasonic tank. Products were degassed for five minutes. Twenty-four preweighed steel coupons were coated with the Castrol Industrial Inc Safety Draw 722X (61788-76-9, 64742-54-7) using a swab. Coupons were weighed a second time to determine the amount of soil added. Three coupons were immersed into each product and cleaned for 5 minutes using ultrasonic agitation. Following cleaning, coupons were rinsed for 15 seconds in tap water at 120 F and dried using air blow off for 30 seconds at room temperature. Final weights were recorded, and efficiencies were calculated.
Results:	The addition of ultrasonic energy improved cleaning results for the four previously tested products. The additional four products also were found to be effective as well. Of the eight products, seven removed over 80% of the Safety Draw within 5 minutes of cleaning. Four of these products removed more than 98%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Surface Cleanse 930	0.5202	0.0915	82.41
	0.4321	0.1184	72.60
	0.8422	0.0832	90.12
SC Aircraft	0.3650	0.2384	34.68
	0.3672	0.0276	92.48
	0.8338	0.1527	81.69
M Aero	0.6852	0.0221	96.77
	0.7399	0.0010	99.86
	0.3940	0.0086	97.82
Polyspray Jet 790 xs	0.7679	0.0104	98.65
	0.3692	0.0014	99.62
	0.5347	-0.0010	100.19
Metalnox M6310	0.3681	0.0865	76.50
	0.5443	0.0561	89.69
	0.3304	-0.0075	102.27
Daraclean 282 GF	0.7463	0.0104	98.61
	0.5848	0.0046	99.21
	0.4377	0.0065	98.51
Micro 90	0.7452	0.0239	96.79
	0.7318	0.0881	87.96
	0.5172	0.1007	80.53
Luminox	0.4334	0.0109	97.49
	0.9377	0.0241	97.43
	0.6763	0.0030	99.56

Summary:

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Substrates:	Steel				
Contaminants:	Cutting/Tapping Fluids				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	81.71	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	69.62	☐	
Church & Dwight Co Inc.	Armakleen M Aero	5	98.15	☑	
US Polychem Corporation	Polyspray Jet 790 XS	5	99.48	☑	
Kyzen Corporation	Metalnox M6310 (For Comparison Only)	5	89.49	☑	
Magnaflux	Daraclean 282 GF	5	98.78	☑	
International Products Corporation	Micro 90 Conc.	5	88.43	☑	
Alconox Inc	Luminox	5	98.16	☑	

Conclusion: The seven top performing products will be evaluated on the second supplied contaminant using ultrasonic cleaning.