CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 08/07/2008

Experimenters: Heidi Wilcox, Shweta Bansal

ClientType: Machining Company

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate aqueous alternatives on supplied lubricant using ultrasonic cleaning.

Experimental Procedure: Five products from previous trials were selected for testing. Four of the products were diluted to 20% and the fifth product was diluted to 5%. Products were heated to 130 F and immersed in a Branson 40 kHz ultrasonic tank and degassed for at least five minutes.
Fifteen preweighed coupons were coated with the supplied Extreme Pressure Lube #3 using a handheld swab and weighed a second time to determine the amount of soil added. Three coupons were cleaned with ultrasonic energy for five minutes, rinsed in tap water for 15 seconds at 120 F and dried using compressed air at room temperature for 30 seconds. Final weights were recorded, and efficiencies calculated for each coupon cleaned.

Results: Two of the six products removed more than 80% of the rust preventative. Three removed less than 75%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Shopmaster LpH	0.4876	0.1652	66.12
	0.4722	0.1540	67.39
	0.5005	0.0569	88.63
Aquavantage 1400 GD	0.3284	0.0212	93.54
	0.4346	0.0167	96.16
	0.4727	0.1955	58.64
Inproclean 3800	0.4658	0.1424	69.43
	0.4484	0.1422	68.29
	0.5797	0.2482	57.18
Bio T 300 B	0.3805	0.0285	92.51
	0.4506	0.0475	89.46
	0.5586	0.0467	91.64
SC Aircraft & Metal Cleaner	0.5761	0.1339	76.76
	0.5621	0.0688	87.76
	0.6420	0.3889	39.42

Summary:

Substrates:	Steel				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Buckeye International	Shopmaster LPH	20	74.05	☐	
Brulin Corporation	Aquavantage 1400	20	82.78	☑	
Oakite Products	Inproclean 3800	20	64.97	☐	
Bio Chem Systems	Bio T 300 B	5	91.20	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	20	67.98	☐	

Conclusion: Two products were found to be effective on all four contaminants when used with ultrasonic energy.