CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	08/06/2008
Experimenters:	Heidi Wilcox, Shweta Bansal
ClientType:	Machining Company
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids
Cleaning Methods:	Ultrasonics
Analytical Methods:	Gravimetric
Purpose:	To evaluate aqueous alternatives on grinding fluid using ultrasonic energy
Experimental Procedure:	Six products from previous trials were selected for testing. Five of the products were diluted to 20% and the sixth 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. Eighteen preweighed coupons were coated with the supplied grinding fluid 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:	Five of the six products removed more than 90% of the rust preventative. One removed less than 80%. 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	0.1251	0.0054	95.68
	0.1004	-0.0085	108.47
	0.2205	0.0072	96.73
Aquavantage 1400 GD	0.1423	-0.0001	100.07
	0.1767	-0.0071	104.02
	0.1971	0.0184	90.66
Shopmaster HP	0.1832	0.0495	72.98
	0.1579	0.0596	62.25
	0.2018	0.0326	83.85
Inproclean 3800	0.1923	-0.0012	100.62
	0.1747	0.0282	83.86
	0.1377	0.0137	90.05
Bio T 300 B	0.1761	0.0195	88.93
	0.1657	-0.0034	102.05
	0.1809	0.0104	94.25
SC Aircraft & Metal Cleaner	0.1508	0.0078	94.83
	0.2408	-0.0020	100.83
	0.1175	0.0056	95.23

Summary:

Substrates:	Steel
Contaminants:	Cutting/Tapping Fluids

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Buckeye International	Shopmaster LPH	20	100.29	☑	
Brulin Corporation	Aquavantage 1400	20	98.25	☑	
Buckeye International	Shopmaster HP	20	73.03	☐	
Oakite Products	Inproclean 3800	20	91.57	☑	
Bio Chem Systems	Bio T 300 B	5	95.08	☑	

Conclusion: The top five products from this trial will be evaluated next on the supplied lubricant.