CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	05/20/2008
Experimenters:	Jason Marshall, Shweta Bansal
ClientType:	Machining Company
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Gravimetric
Purpose:	To evaluate products at higher concentrations and longer times on grinding fluid.
Experimental Procedure:	Three products from previous lab testing were used at 20% dilution and one was used at five percent. Preweighed coupons were coated with the supplied grinding fluid (Houghton - Grind (HOUC 420060) using a hand held swab and weighed a second time to determine the amount of soil added. Each cleaner was put in a bowl and three coupons were dunked into the solution at a constant rate for 30 seconds of cleaning. The coupons were then put on a tray and when done and allowed to air dry. There was no rinse. The process was done to as closely replicate the process used on site as possible. Once dry, final weights were recorded, and efficiency calculated for each coupon cleaned. A second batch of coupons were cleaned for 1 minute following all other procedures. An additional three products were included in the evaluation at 20% dilutions.
Results:	The 20% solution at 30 seconds were still ineffective on the grinding fluid. However, the increased cleaning time (1 minute) improved the results with two of the products removnig over 90% of the contaminant. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned at both time lengths.

30 Second Cleaning

Cleaner	Initial wt	Final wt	% Removed
Shopmaster LPH	0.1397	0.0430	69.22
	0.0556	0.0607	-9.17
	0.0954	0.0485	49.16
Shopmaster HP	0.1515	0.0697	53.99
	0.0678	0.0432	36.28
	0.0990	0.0666	32.73
Bio T 300 B	0.0907	0.0435	52.04
	0.1567	0.0380	75.75
	0.0983	0.0504	48.73

1 minute cleaning Grinding Fluid

Cleaner	Initial wt	Final wt	% Removed
SC Aircraft	0.1860	0.0120	93.55
	0.2019	0.0155	92.32
	0.1409	0.0110	92.19
Inproclean 3800	0.1529	0.0171	88.82
	0.2310	0.0122	94.72
	0.1980	0.0183	90.76
Aquavantage 1400 GD	0.1744	0.0324	81.42
	0.0872	0.0339	61.12
	0.1195	0.0466	61.00
Shopmaster LPH	0.2909	0.1386	52.35
	0.1044	0.0544	47.89
	0.2163	0.0218	89.92
Shopmaster HP	0.1075	0.0318	70.42
	0.0754	0.0459	39.12

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	0.1991	0.0608	69.46
Bio T 300 B	0.2037	0.0760	62.69
	0.2221	0.0343	84.56
	0.1032	0.0312	69.77

Summary:

Substrates:	Aluminum				
Contaminants:	Cutting/Tapping Fluids				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Buckeye International	Shopmaster LPH	20	63.34	☐	
Buckeye International	Shopmaster HP	20	59.67	☐	
Bio Chem Systems	Bio T 300 B	5	72.34	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	20	92.69	☑	
Oakite Products	Inproclean 3800	20	91.43	☑	
Brulin Corporation	Aquavantage 1400	20	67.85	☐	

Conclusion: The increased concentration and time both proved effective on the grinding fluid.