CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 04/30/2008

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Machining Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Cutting/Tapping Fluids

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate selected products on second supplied cutting fluid using simulated cleaning process.

Experimental Procedure: Preweighed coupons were coated with the supplied cutting fluid (WA wood, 57 F Cutting oil) using a handheld swab and weighed a second time to determine the amount of soil added.

The same six cleaners were 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.

Results: Only one product was moderately successful, removing just over 80% of the cutting fluid. Two products removed over 50% and two removed just under 50%. The table below lists the amount of soil added, the amount remaining and the efficiency for the coupons cleaned.

Cleaner	Initial wt	Final wt	% Removed
Solsafe 245	0.3962	0.0724	81.730
	0.3874	0.0541	86.040
	0.4505	0.0771	82.890
Metalnox M6310	0.3645	0.2270	37.720
	0.5897	0.3820	35.220
	0.6573	0.3098	52.870
Ionox HC 2	0.4813	0.3536	26.530
	0.4012	0.3868	3.590
	0.5882	0.0813	86.180
Soy Clear 1500	0.6034	0.2406	60.130
	0.6098	0.2130	65.070
	0.8293	0.2413	70.900
Biodiesel	0.4358	0.1980	54.570
	0.4878	0.1940	60.230
	0.4603	0.1615	64.910
SC Supersolve	0.5118	0.2864	44.04
	0.5555	0.2199	60.41
	0.4138	0.2423	41.45

Summary:

Substrates:	Aluminum
Contaminants:	Cutting/Tapping Fluids

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Solsafe 245	100	83.55	☑	
Kyzen Corporation	Metalnox M6310 (For Comparison Only)	100	41.94	☐	
Kyzen Corporation	Ionox HC 2	100	38.77	☐	
AG Environmental Products	Soy Clear 1500	100	65.31	☑	
Newport Biodiesel	Biodiesel	100	59.90	☐	
Gemtek Products	SC Supersolve Safety Solvent	100	48.63	☐	

Conclusion:

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Longer cleaning times should improve the efficiencies for many of the selected products. All six will be evaluated on the third supplied metal working fluid.