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: Coatings

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate selected products on third supplied metal working fluid using simulated cleaning process

Experimental Procedure: Preweighed coupons were coated with the supplied rust preventative (WA Wood FPS Rustnot) coating 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: Two products were moderately successful, removing just under 80% of the cutting fluid. Three products removed over 60%. 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	0.2318	0.0979	57.77
	0.2433	0.0853	64.94
	0.2369	0.0756	68.09
Metalnox M6310	0.2875	0.0533	81.46
	0.2139	0.0652	69.52
	0.4080	0.0558	86.32
Ionox HC 2	0.1237	0.0334	73.00
	0.3589	0.1018	71.64
	0.3187	0.0950	70.19
Soy Clear 1500	0.2197	0.1693	22.94
	0.3513	0.0955	72.82
	0.3048	0.1086	64.37
Biodiesel	0.4299	0.1093	74.58
	0.3216	0.1754	45.46
	0.4310	0.1572	63.53
SC Supersolve	0.3908	0.2024	48.21
	0.1098	0.0174	84.15
	0.4074	0.1512	62.89

Summary:

Substrates:	Aluminum
Contaminants:	Coatings

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Solsafe 245	100	63.60	☑	
Kyzen Corporation	Metalnox M6310 (For Comparison Only)	100	79.10	☑	
Kyzen Corporation	Ionox HC 2	100	71.61	☑	
AG Environmental Products	Soy Clear 1500	100	53.88	☐	
Newport Biodiesel	Biodiesel	100	61.19	☑	
Gemtek Products	SC Supersolve Safety Solvent	100	65.08	☑	

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.

Solsafe 245 had the highest combined cleaning efficiency followed by Metalnox M6310 when looking at all three fluids.