CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009

DateRun: 02/10/2009

Experimenters: Johanna Oviedo

ClientType: Lab

ProjectNumber: Project #1

Substrates: Copper

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual

Purpose: To test nontoxic industrial cleaning solutions for oil removal.

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning.

Products were selected based on the compatibility of substrate and removal of foreign substance. Used 5% concentration and heated the samples at 135F. The steel coupons were immersed in a product for 5 minutes, rinsed for 30 seconds in tap water at 120F and dried in 30 seconds using compressed air is room temperature. Coupons were coated with used oil. Using a handheld swab and allowed to dry for 144 minutes at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. After cleaning process, the final weights were recorded, efficiencies were calculated and recorded.

Results:

Cleaner	Initial wt	Final wt	% Removed
Industrial Floor Cleaner			
	0.0184	0.0073	60.33
	0.0367	0.0322	12.26
	0.0380	0.0256	32.63
Biosolvent			
	0.0141	0.0116	17.73
	0.0186	0.0112	39.78
	0.0149	0.0094	36.91
Free & Clear All Purpose			
	0.0609	0.0424	30.38
	0.0420	0.0161	61.67
	0.0378	0.0202	46.56
#10			
	0.0318	0.0243	23.58
	0.0436	0.0276	36.70
	0.0583	0.0442	24.19

Summary:

Substrates:	Copper
Contaminants:	Inks

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Kyzen Corporation	Industrial Floor Cleaner 11	10	35.07	☐	
Vertec BioSolvents	VertecBio Gold Unscented Part Cleaner	10	31.48	☐	
Seventh Generation	Free & Clear All Purpose	10	46.20	☐	
Sky Products Company Inc	Cleaner #10	10	28.16	☐	

Conclusion: No product removed over 85% of the graffiti from copper using immersion cleaning.