CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 05/01/2006

Experimenters: Jason Marshall

ClientType: General

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Paints

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate successful alternatives on the second supplied paint formulation using ultrasonic cleaning.

Experimental Procedure: The selected products were diluted to 5% using DI water in 250 ml beakers and heated to 130 F on a hot plate. The client supplied product was used at full strength.

The contaminant consisted of the second two part paint formulation from RPM Wood Finishes Group. The first was still the MS2664 Catalyst White (108-10-1, 28182-81-2, 822-06-0) and was used at three parts. The second, 9-6LP9258 White Primer Topcoat (13463-67-7, 110-43-0, 123-86-4, 108-10-1, 108-38-3) was used at one part. The mixed topcoat was applied to twenty-one preweighed steel coupons and allowed to dry. A second weight was recorded to determine the amount of paint applied.

Three painted coupons were immersed in a cleaning product and cleaned for 10 minutes using a 40 kHz ultrasonic tank. After the cleaning, coupons were rinsed in a tap water bath for 15 seconds at 120 F and air dried for 30 seconds at room temperature. The coupons were then rubbed with a gloved hand to determine how easily the paint could be removed. Once dry, the coupons were weighed a final time and removal efficiencies were calculated.

Results: Only one product had trouble removing the topcoat mix using ultrasonic and wiping. The other products removed over 95% of paint. The table below lists the amount of paint applied, the amount remaining, the efficiencies and observations for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Solsafe 245	0.1221	0.0056	95.41
	0.1006	0.0016	98.41
	0.0709	0.0033	95.35
Aquavantage 3800 GD	0.1254	-0.0002	100.16
	0.0697	0.0000	100.00
	0.0869	0.0001	99.88
Inproclean 4000 T	0.0733	0.0013	98.23
	0.0726	0.0029	96.01
	0.1336	0.0011	99.18
Beyond 2006	0.1071	0.0011	98.97
	0.0630	0.0334	46.98
	0.0478	0.0311	34.94
A 2000 XS	0.0974	0.0003	99.69
	0.1062	0.0013	98.78
	0.1337	0.0004	99.70
Surface Cleanse 930	0.1302	0.0008	99.39
	0.0954	0.0012	98.74
	0.1074	0.0001	99.91
D-Zolve 1012	0.1420	-0.0001	100.07
	0.1260	0.0007	99.44
	0.1280	0.0002	99.84

Summary:

Substrates:	Steel				
Contaminants:	Paints				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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Bio Chem Systems	Solsafe 245	100	96.39	☑	
Brulin Corporation	Aquavantage 3800 GD	5	100.01	☑	
Oakite Products	Inproclean 4000 T	5	97.80	☑	
Today & Beyond	Beyond 2006	5	60.30	☐	
US Polychem Corporation	Polychem A 2000 XS	5	99.39	☑	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	97.34	☑	
Transene Company, Inc.	D Zolve 1012	100	99.79	☑	

Conclusion: The five alternatives will be tested on the removal of both the primer and topcoat paint mixtures layered on the steel coupons.