CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2006
DateRun:	05/03/2006
Experimenters:	Jason Marshall
ClientType:	General
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Paints
Cleaning Methods:	Ultrasonics
Analytical Methods:	Gravimetric
Purpose:	To evaluate alternative products on cleaning a primer-topcoat combination 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. Coupons were first coated with the two part primer formulation from RPM Wood Finishes Group. It contained, MS2664 Catalyst White (108-10-1, 28182-81-2, 822-06-0) at three parts and MS2669 Primer (108-10-1, 28182-81-2, 822-06-0) at one part. The mixed paint/primer was applied to eighteen preweighed steel coupons and allowed to dry. Following the primer coat, the paint formulation from RPM Wood Finishes Group consisting of MS2664 Catalyst White (108-10-1, 28182-81-2, 822-06-0) at three parts and 9-6LP9258 White Primer Topcoat (13463-67-7, 110-43-0, 123-86-4, 108-10-1, 108-38-3) at one part was applied to the coupons and allowed to dry. A second weight was recorded to determine the amount of primer and 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:	Three of the alternatives, Solsafe 245, Inproclean 4000T and Surface Cleanse 930 were easily rubbed from the surface following cleaning. Both Aquavantage 3800 GD and Polychem A 2000 XS did allow the paint to be easily removed. The supplied product dissolved all of the paint mix from the coupons. The table below lists the amount of primer/paint applied, the amount remaining and the effectiveness of the products.

Cleaner	Initial wt	Final wt	% Removed	Observations
Solsafe 245	0.0689	0.0041	94.05	
	0.0711	0.0048	93.25	Some Effort to start peeling
	0.0881	0.0043	95.12	
Aquavantage 3800 GD	0.1070	0.0062	94.21	
	0.0778	0.0542	30.33	Two cleaned easily, one had trouble
	0.0913	0.0075	91.79	
Inproclean 4000 T	0.0757	0.0039	94.85	
	0.1259	0.0041	96.74	Easily removed
	0.0867	0.0044	94.93	
A 2000 XS	0.1520	0.0060	96.05	
	0.0990	0.0383	61.31	Two cleaned easily, one had trouble
	0.1099	0.0060	94.54	
Surface Cleanse 930	0.0975	0.0040	95.90	
	0.1047	0.0064	93.89	Some Effort to start peeling

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	0.1230	0.0055	95.53	
D-Zolve 1012	0.1636	-0.0001	100.06	
	0.1520	0.0005	99.67	Dissolved
	0.0939	0.0001	99.89	

Summary:

Substrates:	Steel
Contaminants:	Paints

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Bio Chem Systems	Solsafe 245	100	94.14	☑	
Brulin Corporation	Aquavantage 3800 GD	5	72.11	☐	
Oakite Products	Inproclean 4000 T	5	95.51	☑	
US Polychem Corporation	Polychem A 2000 XS	5	83.97	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	95.10	☑	
Transene Company, Inc.	D Zolve 1012	100	99.88	☑	

Conclusion: The effective alternatives will be used on the supplied spindle coated with the corresponding paint mixture