CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 05/08/2006

Experimenters: Jason Marshall

ClientType: General

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Paints

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To reevaluate selected products at longer cleaning times.

Experimental Procedure: Three products from the previous trial were selected for testing at longer temperatures. An additional product from the first contaminant was also included. Two of the products were diluted to 5% using DI water in 250 ml beakers and heated to 130 F on a hot plate. In addition two other products were used at full strength.

The contaminant consisted of two components from Westfield Coatings Company. The first, ARC Fast Dry Catalyst (123-86-4, 110-43-0, 108-65-6), was used at one part. The second, ARC Fast Dry (108-10-1) was used at two parts. The mixed paint/primer was applied to twelve 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 30 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: Two products removed over 95% of the paint. One of these, Citrus Burst 7, was used at full strength instead of the original 5% concentration. After cleaning and rinsing, the coupon still had a slight residue. The Solsafe 245 allowed the coating to be removed with some rubbing effort. The table below lists the amount of paint applied, the amount remaining and the effectiveness of the products.

Cleaner	Initial wt	Final wt	% Removed	Observations
Inproclean 4000 T	0.0859	0.0031	96.39	Easily wiped off
	0.1436	0.0058	95.96	
	0.1885	0.0147	92.20	
Solsafe 245	0.0803	0.0141	82.44	Rubbed off
	0.1588	0.0259	83.69	
	0.1420	0.0443	68.80	
Citrus Burst 7	0.1842	0.0024	98.70	Easily wiped off
	0.1670	0.0120	92.81	
	0.2071	0.0205	90.10	
Shopmaster RC	0.2788	0.2774	0.50	No removal
	0.1950	0.1784	8.51	
	0.1133	0.1010	10.86	

Summary:

Substrates:	Steel
Contaminants:	Paints

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Oakite Products	Inproclean 4000 T	5	94.85	☑	
Bio Chem Systems	Solsafe 245	100	78.31	☐	
Florida Chemical Company	Citrus Burst 7	100	93.87	☑	
Buckeye International	Shopmaster RC	100	6.62	☐	

Conclusion: Two products, Inproclean 4000 T and Citrus Burst 7, were effective at removing this coating from the coupons after 30 minutes of ultrasonic cleaning and will be used on the supplied parts.

CLEANING LABORATORY EVALUATION SUMMARY