CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 09/16/2001

Experimenters: Jason Marshall

ClientType: Metal

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Coatings

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: Evaluating previously tested effective products on second Stubbs rust preventative

Experimental Procedure: Six successful cleaners were selected from the previous trial. Two additional cleaners were used based on client's current cleaning practices. Each product was diluted to 5% with DI water in a 600 ml beaker. Twenty-one preweighed steel coupons were coated with the Rustill DWX 30 using a hand held swab. The rust preventative was allowed to sit on the coupons for 10 minutes prior to being reweighed. Following the second weighing, three coupons were immersed into each solution and allowed to soak for 3 minutes at 130 F. At the end of the 3 minutes, each coupon was rinsed in a tap water bath at 120 F for 30 seconds and dried with a heat gun at 500 F for 1 minute. After the coupons cooled to room temperature, a final weight was recorded and cleaning efficiencies were calculated.

Rust Preventatives: Castrol Rustilo DWX 30 (64742-82-1; 61790-48-5; 112-34-5)

Results: The cleaning efficiencies ranged from a low of 89.87% (Cerat Clean) to a high of 99.80% (Inproclean 3800). Only one cleaner, Oakite's Inproclean 3800, performed better than Dasco Clean. Four products removed over 99% of the contaminant from the steel coupons. All cleaners were better than the Certa Clean. The following table lists the calculated efficiencies and the product ranking.

Table 1. Cleaning Efficiencies

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev	Rank
Inproclean	100.00	99.57	99.83	99.80	0.21	1
Multikleen	98.37	99.94	100.16	99.49	0.97	4
Beyond	99.21	99.44	99.89	99.51	0.35	3
Daso Clean	100.00	99.59	99.45	99.68	0.29	2
SC Aircraft	95.82	96.86	97.80	96.82	0.99	5
Sea Wash	96.45	90.81	91.54	92.93	3.07	6
Certa Clean	89.87	90.34	89.40	89.87	0.47	7

Summary:

Substrates:	Steel				
Contaminants:	Coatings				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Oakite Products	Inproclean 3800	5	99.80	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	96.82	☐	
Heatbath Corporation	Multi-Kleen 1568	5	99.49	☑	
Today & Beyond	Beyond 2001	5	99.51	☑	
Warren Chemical Company	Sea Wash 700 New	5	92.93	☐	
Houghton International	Cerfa Kleen 5387		89.87	☐	
DA Stuart Company	Dasco Kleen 3250		99.68	☑	

Conclusion: The four products that removed over 99% of the contaminant will be used in the next trial involving a third rust preventative solution.