CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 09/23/2008

Experimenters: Jason Marshall

ClientType: Machine Construction Company

ProjectNumber: Project #2

Substrates: Steel

PartType: Coupon

Contaminants: Coatings

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate effective products on supplied contaminants using heated immersion cleaning.

Experimental Procedure: Six products were selected from the previous trial based on success on removing the three supplied soils using ultrasonic cleaning. Three products were diluted to 5% using DI water in 400 ml beakers. The other three were used at full strength based on vendor recommendations. Beakers were heated to 130 F on a hot plate. Eighteen preweighed steel coupons were coated with the rust preventative VCI 369 using a hand held swab. Coupons were weighed again to determine the amount of soil added. Three coupons were cleaned in each solution for 10 minutes using stir bar agitation. Coupons were rinsed for 15 seconds in tap water at 120 F and dried using compressed air at room temperature for 30 seconds. Final weights were recorded and efficiencies calculated.

Results: Only two of the products removed over 85% of the VCI 369 in 10 minutes of immersion cleaning. Two other products removed about 70% and the last two removed under 50%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Aquavantage 1400 GD			
	0.1827	0.0569	68.86
	0.1608	0.0547	65.98
	0.2647	0.0738	72.12
Grease Feast			
	0.1912	0.0390	79.60
	0.1244	0.0433	65.19
	0.2118	0.0343	83.81
SC Aircraft & Metal Cleaner			
	0.1518	0.1016	33.07
	0.1828	0.0820	55.14
	0.2148	0.1145	46.69
SC MaxiSolve			
	0.3574	0.1281	64.16
	0.1716	0.1138	33.68
	0.1801	0.1172	34.93
Smart Solve 605			
	0.1118	0.0191	82.92
	0.1940	0.0162	91.65
	0.2587	0.0154	94.05
Bean-e-doo			
	0.1882	0.0024	98.72
	0.1248	0.0095	92.39
	0.2969	0.0028	99.06

Summary:

Substrates:	Steel				
Contaminants:	Coatings				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Aquavantage 1400	5	68.99	☐	
Ensolve Biosystems Inc	Grease Feast Plus	100	76.20	☐	

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Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	44.97	☐	
Gemtek Products	Safe Care (SC) Maxi Solv	5	44.26	☐	
United Laboratories International	Smart Solve 605	100	89.54	☑	
Franmar Chemical	Bean-e-doo (Parts Washer Solvent)	100	96.72	☑	

Conclusion: The two effective products will be evaluated on VCI 368 using heated immersion cleaning.