CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 05/25/2004

Experimenters: Jason Marshall

ClientType: Lab

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Paints

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: Laboratory evaluations of alternative cleaning products

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning.

All products were used heated to 96 F on a hot plate in 250 ml beakers. Eighteen preweighed steel coupons were coated with a varnish mix containing Cooper's Creek Chemicals, Cooper Black Tank Paint No 739 (64742-89-8, 8052-42-4, 108-88-3); Sherwin Williams Company, V74B2 Black Asphaltum coating (64742-89-8, 64742-88-7, 8052-42-4) using a handheld swab. The oil was then heated with a Master Appliance Heat gun at 300 F for 10 minutes. After cooling to room temperature, a second weighing was performed to determine the amount of soil that was added. Three coupons were cleaned in each solution for 5 minutes with minimal stir-bar agitation. After drying, coupons were weighed a final time to determine the cleaning efficiency of each product.

Results:

Cleaner	Initial wt	Final wt	% Removed
Vertrel MCA	0.1033	0.0490	52.57
	0.0739	0.0587	20.57
	0.4764	0.1710	64.11
Heavy Duty Degreaser C	0.4009	0.1452	63.78
	0.1833	0.1334	27.22
	0.4228	0.3069	27.41
HFE 7100	0.2702	0.1881	30.38
	0.3106	0.2235	28.04
	0.0964	0.0768	20.33
OS 10	0.1747	0.1165	33.31
	0.6643	0.4647	30.05
	0.2005	0.1801	10.17
OS 20	0.1024	0.0755	26.27
	0.1767	0.1214	31.30
	0.4048	0.2911	28.09
OS 30	0.0619	0.0582	5.98
	0.3670	0.2762	24.74
	0.0697	0.0646	7.32

Summary:

Substrates:	Steel
Contaminants:	Paints

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
DuPont	Vertrel MCA	100	45.75	☐	
Micro Care	Heavy Duty Degreaser C	100	39.47	☐	
3M	HFE 7100	100	26.25	☐	
Dow Chemical Company	OS 10	100	24.51	☐	
Dow Chemical Company	OS 20	100	28.55	☐	
Dow Chemical Company	OS 30	100	12.68	☐	

Conclusion: No product removed over 50% of the contaminant.