CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2005
DateRun:	09/21/2005
Experimenters:	Jason Marshall
ClientType:	Lab
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Oil
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric, Visual
Purpose:	Laboratory evaluations of alternative cleaning products
Experimental Procedure:	Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Eight products were evaluated for the removal of C-Eblis cutting oil from aluminum coupons using immersion cleaning. The products were diluted to 5% using DI water in 600 ml beakers. Water was also evaluated as a control. Twenty-seven preweighed aluminum coupons were coated with the oil using a handheld swab. Coupons were weighed again to determine the amount of oil added. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation at room temperature. Coupons were rinsed in a tap water bath for 15 seconds at room temperature and rinsed for 2 minutes using a Master Appliance Heat Gun at 300 F. Final weights were measured and efficiencies were calculated.

Results:

Cleaner	Initial	wt Final wt	% Removed
KPC 820 N	0.1827	0.0601	67.10
	0.4339	0.0680	84.33
	0.2917	0.0748	74.36
Formula 815 GD	0.2720	0.0916	66.32
	0.2457	0.0696	71.67
	0.2759	0.0981	64.44
Shopmaster	0.3328	0.0689	79.3
	0.2751	0.0728	73.54
	0.3290	0.0381	88.42
SC Aircraft & Metal	0.3580	0.0897	74.94
	0.3046	0.0889	70.81
	0.1934	0.0800	58.63
Surface Cleanse 930	0.1396	0.0681	51.22
	0.2323	0.0346	85.11
	0.3384	0.0728	78.49
Daraclean 283	0.4045	0.1203	70.26
	0.2523	0.0981	61.12
	0.2198	0.0804	63.42
Inproclean 3800	0.2446	0.0759	68.97
	0.3051	0.0719	76.43
	0.2476	0.0908	63.33
Beyond 2001	0.2125	0.0765	64.00
	0.2463	0.1090	55.75
	0.2582	0.1639	36.52
Water	0.2184	0.1686	22.8
	0.2743	0.1591	42.00
	0.1990	0.1443	27.49

Prior to weighing, coupons were inspected to rank the products for performance based on visual observations. The table below lists the calculated ranking from gravimetric analysis and compares to two visual observation rankings.

	Ranking

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Product	Gravimetric	Visual 1	Visual 2
KPC 820 N	2	1	1
Formula 815 GD	6	3	2
Shopmaster	1	2	3
SC Aircraft & Metal	5	4	4
Surface Cleanse 930	3	5	5
Daraclean 283	7	7	8
Inproclean 3800	4	6	6
Beyond 2001	8	8	9
Water	9	9	7

Summary:

Substrates:	Aluminum
Contaminants:	Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
AW Chesterton	KPC 820 N	5	75.26	☐	
Brulin Corporation	Formula 815 GD	5	67.48	☐	
Buckeye International	Shopmaster	5	80.42	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	68.13	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	71.60	☐	
Magnaflux	Daraclean 283	5	64.93	☐	
Oakite Products	Inproclean 3800	5	69.58	☐	
Today & Beyond	Beyond 2001	5	52.09	☐	
Water	Water	100	30.76	☐	

Conclusion: No product removed over 85% of the oil under the conditions tested.