CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2006
DateRun:	08/13/2006
Experimenters:	Jason Marshall
ClientType:	Metal Working
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Lubricating/Lapping Oils, Oil
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate possible alternatives to TCE for first supplied oil.
Experimental Procedure:	Eight alternative products were selected from the lab's database of testing results based on supplied client information. Products were selected based on oil removal potential and compatibility with various metal substrates. Each product was diluted to 5% in 600 ml beakers using DI water and heated to 130 F on a hot plate. Twenty-four preweighed coupons were coated with US Oil Company US Draw 1517 (petroleum oil) using a hand held swab. Coupons were weighed a second time to determine the amount of oil added. Three coupons were cleaned in each solution for five minutes using minimal stir bar agitation. Coupons were rinsed for 15 seconds in a tap water bath at 120 F and dried using a Master Appliance Heat gun at 500 F for 30 seconds. Once dry coupons were weighed a final time and product efficiencies were calculated.
Results:	Four of the eight selected products removed over 85% of the oil from the stainless-steel coupons within the five minutes of immersion cleaning. One product, Sea Wash Blue, removed over 95% of the oil. The follow table lists the amount of oil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
SC Aircraft & Metal	0.1014	0.0708	30.18
	0.1888	0.0858	54.56
	0.2943	0.1044	64.53
Surface Cleanse 930	0.3772	0.0449	88.10
	0.2622	0.0293	88.83
	0.1642	0.0286	82.58
Daraclean 283	0.2194	0.0593	72.97
	0.4346	0.0801	81.57
	0.3446	0.1001	70.95
Aquavantage 1400	0.3483	0.0487	86.02
	0.3483	0.0443	87.28
	0.3023	0.0435	85.61
M Aero NS	0.2269	0.0604	73.38
	0.2705	0.0471	82.59
	0.2567	0.0702	72.65
Beyond 2001	0.3296	0.0453	86.26
	0.3189	0.0772	75.79
	0.3351	0.0813	75.74
Inproclean 3800	0.3067	0.0357	88.36
	0.2583	0.0537	79.21
	0.3394	0.0184	94.58
Sea Wash Blue	0.3669	0.0048	98.69
	0.4242	0.0149	96.49
	0.5201	0.0233	95.52

Summary:

Substrates:	Stainless Steel
Contaminants:	Lubricating/Lapping Oils, Oil

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	49.75	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	86.50	☑	
Magnaflux	Daraclean 283	5	75.16	☐	
Brulin Corporation	Aquavantage 1400	5	86.30	☑	
Church & Dwight Co Inc.	Armakleen M Aero NS	5	76.21	☐	
Today & Beyond	Beyond 2001	5	79.26	☐	
Oakite Products	Inproclean 3800	5	87.38	☑	
Warren Chemical Company	Sea Wash Blue	5	96.90	☑	

Conclusion: The four effective products will be used on the next supplied oil.