CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2009
DateRun:	11/04/2009
Experimenters:	Junhee Cho, Johnny Le
ClientType:	Ceramic Coating Company
ProjectNumber:	Project #2
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Oil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate top five products on fifth supplied contaminant using manual cleaning
Experimental Procedure:	Five products from the previous trials were selected based on performance. All were used at room temperature. Two alkaline aqueous cleaners were diluted to 5% using DI water in 300 ml beakers. Three cleaners were used at full strength. Fifteen preweighed aluminum coupons were coated with Mobile DTE light oil using a handheld swab. The contaminated coupons were weighed again to determine the amount of soil added. Each cleaner tested with three coupons. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly Clark Reinforced paper towel was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 3 times with the same cleaning solution. First, Coupon was cleaned for 15 cycles two times; after coupon was cleaned for 15 cycles, experimenter changed the paper towel and soaked with 5 spray of same cleaning solution. At the end of the cleaning, coupons were dried at room temperature naturally. Final weights were recorded and efficiencies were calculated and recorded.
Results:	Two of the five worked very well on the light oil, removing more than 93%. Two other products removed just under 85%. The Activeion unit had the lowest efficiency at 74%. However, two of the three coupons had removal rates higher than 90% and one lower then 40%. A reevaluation of this product will be conducted to determine effectiveness. The table lists the amount of oil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Shopmater RC 100%			
	0.0490	0.0097	80.20
	0.0379	0.0065	82.85
	0.0312	0.0043	86.22
SC Aircraft metal cleaner 5%			
	0.0246	0.0008	96.75
	0.0271	0.0011	95.94
	0.0208	0.0004	98.08
Solsafe 245 100%			
	0.0199	0.0016	91.96
	0.0265	0.0058	78.11
	0.0332	0.0067	79.82
Detergent 8 5%			
	0.0276	0.0021	92.39
	0.0275	0.0021	92.36
	0.0285	0.0016	94.39
Activeion			
	0.0322	0.0031	90.37
	0.0232	0.0016	93.10
	0.0271	0.0164	39.48

Summary:

Substrates:	Aluminum
Contaminants:	Oil

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Buckeye International	Shopmaster RC	100	83.09	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	96.92	☑	
Bio Chem Systems	Solsafe 245	100	83.30	☐	
Alconox Inc	Detergent 8	5	93.05	☑	
Activeion Cleaning Solutions LLC	Activeion Pro	100	74.32	☐	

Conclusion: Based on past performance on the previous four contaminants, all five products will be tested on the fifth supplied contaminant under the same conditions.