CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004

DateRun: 11/08/2004

Experimenters: Jason Marshall

ClientType: Manufacturers of Precision Parts and Assemblies

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate products on second supplied contaminant using ultrasonic cleaning

Experimental Procedure: The same six products from the previous trial were used at the same dilutions and time (5 min). Each beaker was immersed into a Crest 40 kHz ultrasonic tank filled with water heated to 115 F. The products were degassed for 5 minutes.
Eighteen preweighed 6061 aluminum coupons were again contaminated with Valenite Inc. Valcool VNT 910 (102-71-6, 141-43-5, 26896-20-8, 112-05-0) using a swab. A second weighing was performed to determine the amount of soil added. Three coupons were cleaned in each product for 5 minutes with ultrasonics. Coupons were again rinsed in water at 120 F for 15 seconds and dried with air blow off at room temperature for 30 seconds. Once dry, final weights were recorded and efficiencies were calculated.

Results: All six products removed over 89% of the coolant within 5 minutes of cleaning. Five of the six removed over 96%. The client's current cleaner had the highest cleaning efficiency followed closely by Brulin 815 GD. The table below lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Amberclean Q3	0.0098	0.0001	98.98
	0.0190	-0.0001	100.53
	0.0435	0.0002	99.54
Formula 815 GD	0.0216	0.0000	100.00
	0.1134	0.0001	99.91
	0.0730	0.0008	98.90
Inproclean 3800	0.0435	0.0017	96.09
	0.1306	0.0005	99.62
	0.0971	0.0042	95.67
Surface Cleanse 930	0.0651	0.0012	98.16
	0.1170	0.0040	96.58
	0.0348	0.0017	95.11
Valtron SP 2275	0.0963	0.0002	99.79
	0.1114	0.0030	97.31
	0.0567	0.0017	97.00
Ionox HC2	0.1680	0.0040	97.62
	0.0906	0.0059	93.49
	0.0147	0.0033	77.55

Summary:

Substrates:	Aluminum
Contaminants:	Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Innovative Organics Inc	Amberclean Q3	2	99.68	☑	
Brulin Corporation	Formula 815 GD	2	99.61	☑	
Oakite Products	Inproclean 3800	2	97.13	☑	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	2	96.62	☑	
Valtech Corporation	Valtron SP 2275	2	98.03	☑	

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Kyzen Corporation	Ionox HC 2	100	89.55	☑	

Conclusion: Ultrasonic cleaning of both contaminants were effective with many of the aqueous based products in under 5 minutes of cleaning. Supplied parts will be cleaned in the top two cleaning products.