CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 08/06/2001

Experimenters: Jason Marshall

ClientType: Electronics Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Waxes

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To identify a replacement cleaner for toluene to remove wax

Experimental Procedure: Fifteen cleaners were selected based on past laboratory testing and vendor information. Nine aqueous products and six semi-aqueous were chosen. The aqueous products were diluted to 5% using DI water in 250 ml beakers.
The others were used at full strength in the same size beakers. Due to limited amount of wax, only one coupon was used in each solution. The wax was heated and applied to preweighed aluminum coupons. After the wax cooled, a second dirty weight was measured. Cleaning lasted for 30 minutes at room temperature, followed by a DI water spray rinse also at room temperature. Coupons were dried using an air gun. Once the coupons were dry, a final clean weight was made and cleaning efficiencies were calculated.

Results: Of the 15 cleaners only two product removed over 70% of the wax from the aluminum coupons. Bio T Max removed nearly all of the the wax, 99.36%, and D-Greeze 500 Lo removed just over 75% of the wax.

Cleaner	Efficiency	Classification
Bio T Max	99.36	Semi-Aqueous
Green Stuff	9.88	Alk Aqueous
SC 1000	0.48	Alk Aqueous
SC Aircraft	-0.04	Alk Aqueous
Beyond 2003	0.66	Alk Aqueous
DeOx 007	-2.58	Alk Aqueous
Valtron SP 2250 LF	0.24	Alk Aqueous
Daraclean 200	-0.82	Alk Aqueous
Inproclean 3800	-3.06	Alk Aqueous
KPC 820 N	1.75	Alk Aqueous
D Greeze 500 Lo	76.16	Hydrocarbon
EP 921	24.54	D-Limonene
Engine Degreaser	12.63	Terpene
Methyl Ester 1618	28.46	Methyl Ester
SI # 8	1.8	Semi-Aqueous

Summary:

Substrates:	Aluminum				
Contaminants:	Waxes				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Magnaflux	Daraclean 200	5	-0.82	☐	
Bio Chem Systems	Green Stuff 6325	5	9.88	☐	
US Polychem Corporation	Polychem DEOX 007	5	-2.58	☐	
Gemtek Products	SC 1000 Aqueous Cleaner Concentrate	5	0.48	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	-0.04	☐	
Savogran Company	SI #8 Coating Remover	100	1.80	☐	
Today & Beyond	Beyond 2003	5	0.66	☐	
Transene Company, Inc.	D Greeze 500 LO	100	76.16	☑	
AW Chesterton	KPC 820 N	5	1.75		

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Valtech Corporation	Valtron SP 2250 2LF	5	0.24	☐	
Oakite Products	Inproclean 3800	5	-3.06	☐	
Bio Chem Systems	Bio T Max	100	99.36	☑	
Safe Science Inc	Safe Science Engine Degreaser (Industrial)	100	12.63	☐	
Inland Technologies Inc	EP 921	100	24.54	☐	
Twin Rivers Technologies	Methyl Ester 1618	100	28.46	☐	

Conclusion: Bio T Max and D-Greeze 500 both were effective in removing the wax. The aqueous products were only capable of removing less than 10% of the wax if any at all.