CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	12/21/2008
Experimenters:	Jason Marshall
ClientType:	Electrical Manufacturer
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Greases
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate effective products on supplied white lithium grease using manual wiping.
Experimental Procedure:	Ten products were selected from the previous two trials based on success on the supplied ink. All of the products were used at full strength at room temperature. Peweighed steel coupons were coated with the supplied white lithium grease using a handheld swab. The contaminant was allowed to dry for at least a day and then were weighed a second time to determine the amount of grease applied. Three coupons were placed into a Gardner Straight Line washability unit (designed for manual cleaning testing). The cleaning solutions were applied to the three coupons and allowed to sit for one minute. Simulated manual cleaning was run for 40 cycles or about one minute. Following cleaning, the coupons were dried 30 seconds using air blow off with dry compressed air at room temperature. Final weights were measured, and efficiencies were calculated for each coupon cleaned.
Results:	Eight of the ten removed more than 80% of the grease after one minute of cleaning. Two products removed more than 90%. The table lists the initial weight of the oil, the final weight and the cleaning efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Ink Zapper	0.1163	0.0410	64.75
	0.1363	0.0429	68.53
	0.2650	0.0354	86.64
Graffiti Remover SAC	0.1392	0.0253	81.82
	0.1320	0.0205	84.47
	0.1453	0.0203	86.03
Smart Solve 605	0.1491	0.0195	86.92
	0.1373	0.0169	87.69
	0.1360	0.0179	86.84
EP 921	0.0925	0.0311	66.38
	0.0997	0.0221	77.83
	0.1039	0.0281	72.95
Shopmaster RC	0.1177	0.0127	89.21
	0.0796	0.0113	85.80
	0.1288	0.0118	90.84
Solsafe 245	0.1090	0.0091	91.65
	0.1491	0.0059	96.04
	0.1539	0.0099	93.57
Soyester	0.1987	0.0287	85.56
	0.1757	0.0275	84.35
	0.1143	0.0296	74.10
Maix Solve	0.1074	0.0184	82.87
	0.1196	0.0119	90.05
	0.1785	0.0090	94.96
Green Force Ultra	0.2538	0.0101	96.02
	0.1589	0.0091	94.27
	0.1001	0.0073	92.71

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Safety Strip HT	0.2440	0.0309	87.34
	0.1285	0.0169	86.85
	0.1074	0.0148	86.22

Summary:

Substrates:	Steel
Contaminants:	Greases

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Vertec BioSolvents	Ink Zapper	100	73.30	☐	
Spartan Chemical Company	Graffiti Remover SAC	100	84.11	☑	
United Laboratories International	Smart Solve 605	100	87.15	☑	
Inland Technologies Inc	EP 921	100	72.39	☐	
Buckeye International	Shopmaster RC	100	88.62	☑	
Bio Chem Systems	Solsafe 245	100	93.75	☑	
Gemtek Products	SC Soyester	100	81.34	☑	
Gemtek Products	Safe Care (SC) Maxi Solv	100	89.29	☑	
Alex C Ferguson Inc	Green Force Ultra	100	94.33	☑	
Brulin Corporation	Safety Strip HT	100	86.80	☑	

Conclusion: The next step will be to pilot the top products on parts, either in the lab or on site to determine the best fit.