CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 03/06/2005

Experimenters: Jason Marshall

ClientType: Manufacturer of Ceramic Capacitors

ProjectNumber: Project #2

Substrates: Ceramics

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Greases, Waxes

Cleaning Methods: Ultrasonics

Analytical Methods:

Purpose: To generate a list of products that can be used to clean ceramics using ultrasonics

Experimental Procedure: Using the laboratory's database for solvent cleaning substitution, the lab generated the following lists of products. The first list contains products that have been evaluated at SSL under similar conditions to the client's criteria. The second list contains vendor suggested products based on client supplied data.

Results:

Contaminant	Wax- Zopher Mills Inc No 1563 Wax (mixture of waxes and resins)	
Equipment	Ultrasonics	
Substrate	Ceramics	
Company	Product	Classification
Universal Photonics	Uni Clear	Terpene
Bio Chem Systems	Bio T 300 B	Terpene-Semi-Aqueous
Florida Chemical Company	D-Limonene	Terpene

Second Soil

Contaminant	Grease - Hibrenia Way Apiezon M1	
Equipment	Ultrasonics	
Substrate	Ceramics	
Company	Product	Classification
Alconox Inc	Liquinox	Alkaline Aqueous
Gemtek Products	SC Aircraft & Metal Cleaner	Alkaline Aqueous
International Products Corp	Micro 90	Alkaline Aqueous
Kyzen Corporation	Metalnox M6314	Alkaline Aqueous
Metabolix Inc	Metabolix E3HB	Ester
Oakite Products	Inproclean 3800	Alkaline Aqueous

Vendor Suggested

Search Parameters			
Contaminant	Cutting/Tapping Fluids	Greases	Waxes
Equipment	Ultrasonics		
Substrate	Ceramics		

Company	Product	Classification
3M	HFE 7200	HFE
Alconox Inc	Alconox	Powder Detergent

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Alconox Inc	Citranox	Acidic Aqueous
Alconox Inc	Liquinox	Alkaline Aqueous
Bio Chem Systems	Bio T 200 A	Terpene
Bio Chem Systems	Bio T Foam Plus	Terpene
Bio Chem Systems	Green Stuff (6325)	Alkaline Aqueous
Bio Chem Systems	Solsafe 245	Petroleum Distillate
Brulin Corporation	Aquavantage 1400	Alkaline Aqueous
Buckeye International	XL 100	Alkaline Aqueous
By-Pas and Star Products	Star Cleaning Miracle # 50	Alkaline Aqueous
Dow Chemical Company	OS 10	Volatile Methyl Siloxanes
Dow Chemical Company	OS 20	Volatile Methyl Siloxanes
Dow Chemical Company	OS 30	Volatile Methyl Siloxanes
DuPont	Vertrel CCA	HFE
DuPont	Vertrel MCA	HFE
Dynamold Solvents Inc	DS 104	Petroleum Distillate
Dynamold Solvents Inc	DS 108	Petroleum Distillate
Enviro Tech International Inc	Ensolv	nPB
Enviro Tech International Inc	Ensolv A	nPB
Finger Lakes Chemical	Safer Stuff	Terpene
Florida Chemical Company	Citrus Burst 7	Terpene
Gemtek Products	EZ Solv	Organic
Gemtek Products	SC 1000	Alkaline Aqueous
Gemtek Products	SC Aircraft & Metal Cleaner	Alkaline Aqueous
Gemtek Products	SC Supersolve	Organic
Hotsy Cleaning Systems	Hotsy Detergents Tub & Pressure Wash	Alkaline Aqueous
Innovative Organics Inc	Amberclean L 12	Alkaline Aqueous
International Products Corporation	LF 2100	Alkaline Aqueous
International Products Corporation	Micro	Alkaline Aqueous
International Products Corporation	Micro 90	Alkaline Aqueous

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Kyzen Corporation	Metalnox M6960	nPB
Magnaflux	Daraclean 200	Alkaline Aqueous
Magnaflux	Daraclean 212	Neutral Aqueous
Magnaflux	Daraclean 235	Neutral Aqueous
Magnaflux	Daraclean 282	Alkaline Aqueous
Magnaflux	Daraclean 282 GF	Alkaline Aqueous
Magnaflux	Daraclean 283	Alkaline Aqueous
Metabolix Inc	Metabolix E3HB	Ester
Micro Care	Flux Remover C	HFE
Micro Care	Heavy Duty Degreaser C	HFE
Safe Science Inc	Safe Science Concrete/ Graffiti (Industrial)	Alkaline Aqueous
Solvent Kleene Inc	D Greeze 500 LO	Organic
SOQ Environmental Technology	Ecomate FN	Alkaline Aqueous
Today & Beyond	Beyond 2001	Alkaline Aqueous
Today & Beyond	Beyond 2003	Alkaline Aqueous
Today & Beyond	Beyond 2004	Alkaline Aqueous
Today & Beyond	Beyond 2005	Alkaline Aqueous
Today & Beyond	Beyond 2006	Alkaline Aqueous
Today & Beyond	Beyond 2007	Alcohol
US Polychem Corporation	Polychem 2000 P	Alkaline Aqueous
US Polychem Corporation	Polychem A 2000 XS	Alkaline Aqueous
US Polychem Corporation	Polychem DEOX 007	Alkaline Aqueous
US Polychem Corporation	Polyspray Jet 790 C	Caustic
US Polychem Corporation	Polyspray Jet 790 P	Alkaline Aqueous
US Polychem Corporation	Polyspray Jet 790 XS	Alkaline Aqueous
Valtech Corporation	Valtron SP 2200	Alkaline Aqueous
Vertec BioSolvents	VertecBio Gold 2	Organic

Summary:

Conclusion: Cleaning varies from case to case. The SSL recommends process specific testing on potential replacement cleaning chemicals. If more information is needed on a particular product, or you are interested in conducting cleaning trials, please contact the lab at (978)934-3133. In addition to the generated list of products, several reports that were conducted for local branch of company were sent to client.