CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2004
DateRun:	08/17/2004
Experimenters:	Jason Marshall
ClientType:	Electronics Manufacturer
ProjectNumber:	Project #1
Substrates:	Carbon Steel, Stainless Steel, Steel
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds, Oil
Cleaning Methods:	Ultrasonics
Analytical Methods:	
Purpose:	To identify alternatives for cleaning oils and polishing compounds from metal surfaces using ultrasonic energy.
Experimental Procedure:	Using the laboratory's database for solvent cleaning substitution, the lab generated the following lists of products. The products have been evaluated at SSL under similar conditions to the client's criteria.
Results:	The lab generated a list of products that have been used to remove various oils and buffing compounds from metals. The first table is a list of the products used to remove oils and the second table is the products used to remove buffing compounds.

Laboratory tested products using ultrasonics cleaning of oils from metal

CompanyName	ProductName	# Trial
Alconox Inc	Citranox	3
Alconox Inc	Det-O-Jet	1
Alconox Inc	Liquinox	1
AW Chesterton	KPC 820 N	1
Bio Chem Systems	Green Stuff (6325)	9
Brulin Corporation	Formula 815 GD	4
Church & Dwight	Armakleen M Auto	2
Fine Organic Corporation	FO 2085 M	1
Gemtek Products	SC Aircraft & Metal Cleaner	1
Heatbath Corporation	Uni Kleen 10	1
Kyzen Corporation	Ionox HC 2	1
MacDermid	ND 17	2
MacDermid	ND LF Supreme	1
Magnaflux	Daraclean 212	1
Magnaflux	Daraclean 232	2
Magnaflux	Daraclean 282	5
Magnaflux	Daraclean 282 GF	8
Magnaflux	Daraclean 283	10
Matchless Metal Polish Company	MC 580	1
Metabolix Inc	Metabolix E3HB	2
Oakite Products	Inproclean 3800	12
Today & Beyond	Beyond 2001	9
US Polychem Corporation	Polychem A 2000 XS	1
Valtech Corporation	Valtron SP 2200	1
Warren Chemical Company	Sea Wash 700	1
Warren Chemical Company	Sea Wash Neutral	1

Laboratory tested products cleaning of buffing compounds

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Company	Product	# Trial
Abatement Technology	Bio Might 100	1
AG Environmental Products	Soy Gold 2000	1
AW Chesterton	181 Low Alkaline Cleaner	1
Betz Laboratories Inc	Custom Clean N CC 2278	2
Bio Chem Systems	Bio T Max	1
Bio Chem Systems	Solsafe 245	2
Brulin Corporation	Formula 815 GD	6
Brulin Corporation	Natural Sol 100	1
Calgon Corporation	GP Xtra	1
Dynamold Solvents Inc	DS 108	1
Emkay Chemical Company	Safety Wash	1
International Products Corporation	Micro 90	6
Magnaflux	Daraclean 282	2
Magnaflux	Daraclean 282 GF	6
Matchless Metal Polish Company	MC 132	5
Oakite Products	Inproclean 3800	6
Safe Science	Safe Science Engine Degreaser	4
Savogran	Dirtex Prepaint Cleaner	1
Simple Green	Simple Green D	2
Solvent Kleene Inc	D Greeze 500 LO	2
Texo Corporation	Texolite 1734 XL	6
Tomah Products	Tomadyne Mix	2
Valtech Corporation	Valtron SP 2250 2LF	8
Watson Technical Associates	Watson Formula 7300	2

Vendor suggested products for oils and buffing compound removal using

CompanyName	ProductName	ClassificationDescription
3M	HFE 71 De	HFE
3M	HFE 7100	HFE
3M	HFE 7200	HFE
Abatement Technology	Bio Might 100	Alkaline Aqueous
AGA Chemical	AK 225	HCFC
Alconox Inc	Alcojet	Powder Detergent-Alkaline
Alconox Inc	Alconox	Powder Detergent
Alconox Inc	Citranox	Acidic Aqueous
Alconox Inc	Detergent 8	Alkaline Aqueous
Alconox Inc	Det-O-Jet	Alkaline Aqueous
Alconox Inc	Liquinox	Alkaline Aqueous
Alconox Inc	Luminox	Neutral Aqueous
Amax Corporation	Safety First	Semi-Aqueous
Ardrox	6333	Caustic
Ashland Chemical	Solvent 6733	Caustic
Ausimont USA Inc	Perfluorosolv PFS 1	HCFC

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AW Chesterton	181 Low Alkaline Cleaner	Alkaline Aqueous
AW Chesterton	217 Pressure wash	Alkaline Aqueous
AW Chesterton	803 Industrial & Marine Solvent II	Alkaline Aqueous
AW Chesterton	KPC 820 N	Alkaline Aqueous
Baum's Castorine Company Inc	Protecto Clean 148	Alkaline Aqueous
BCS Company	251 SR	Alkaline Aqueous
Bio Chem Systems	Bio T 200 A	Terpene
Bio Chem Systems	Bio T Foam Plus	Terpene
Bio Chem Systems	Bio T V 50	Terpene
Bio Chem Systems	Green Stuff (6325)	Alkaline Aqueous
Bio Chem Systems	Solsafe 245	Petroleum Distillate
Brulin Corporation	Aquavantage 1400	Alkaline Aqueous
Brulin Corporation	Formula 815 GD	Alkaline Aqueous
Buckeye International	Immersion Cleaner	Alkaline Aqueous
Buckeye International	Shopmaster	Alkaline Aqueous
Buckeye International	Shopmaster FF	Alkaline Aqueous
Buckeye International	Shopmaster HP	Alkaline Aqueous
Buckeye International	Shopmaster LPH	Alkaline Aqueous
Buckeye International	XL 100	Alkaline Aqueous
By*Pas & Star Cleaning Products	Star Cleaning Miracle # 50	Alkaline Aqueous
CAE Cleaning Technologies	Evercycle 2000	Neutral Aqueous
Calgon Corporation	AK 6215	Alkaline Aqueous
Calgon Corporation	GP Xtra	Alkaline Aqueous
Calgon Corporation	SMS 206 K	Alkaline Aqueous
Carroll Company	Blue Gold Industrial Cleaner	Alkaline Aqueous
Chem Tech	CT 1 Multipurpose Cleaner	Alkaline Aqueous
Chemstation	Green Stuff Neutral	Neutral Aqueous
Chemstation	Greenstuff II	Alkaline Aqueous
Chemtronics	Super Bio Wash	Semi-Aqueous
Chrisal USA Inc	Super CMF 240	Alkaline Aqueous
Church & Dwight	Armaklean E 2001	Alkaline Aqueous

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Church & Dwight	Armaklean E 2002	Alkaline Aqueous
Cleaning Systems	Release	Alkaline Aqueous
CRC Industries	Complex Blue	Semi-Aqueous
DA Stuart Company	Dasco Kleen 3250	Alkaline Aqueous
Delta Omega Technologies Ltd	Attar D(R3)	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
Dow Chemical Company	PnB Glycol Ether	Alcohol
Dow Chemical Company	XUS 40570 Development Solvent	Alcohol
Dow Chemical Company	XUS 40571 Development Solvent	Alcohol
Dow Chemical Company	XUS 40579 Development Solvent	Alcohol
Du Pont	DBE	Ester
Du Pont	DBE 3	Ester
Du Pont	Vertrel CCA	HFE
Du Pont	Vertrel MCA	HFE
Dynamold Solvents Inc	DS 104	Petroleum Distillate
Dynamold Solvents Inc	DS 108	Petroleum Distillate
Eastern Color & Chemical Company	Ecobrite Cleaner AK	Alkaline Aqueous
Ecolink	Bulldog	Alkaline Aqueous
Ecolink	Heavy Weight Non Butyl Detergent	Alkaline Aqueous
Ecolink	Positron	Organic
Ecolink	Universal Steam Cleaner	Alkaline Aqueous
Ecolink	Vortex	Semi-Aqueous
Enviro Tech Int.	Ensolv	nPB
Enviro Tech Int.	Ensolv A	nPB
Environmental Technology	RB Degreaser Cleaner	Alkaline Aqueous
Fine Organic Corporation	FO 2085 M	Alkaline Aqueous
Finger Lakes Chemicals	Safer Stuff	Terpene
Florida Chemical Company	Citrus Burst 7	Terpene
Gemtek Products	EZ Solv	Organic
Gemtek Products	SC 1000	Alkaline Aqueous

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Gemtek Products	SC Aircraft & Metal Cleaner	Alkaline Aqueous
Gemtek Products	SC Supersolve	Organic
Hazwell International	Biosolve	Neutral Aqueous
Heatbath Corporation	Alu-Kleen 36	Acidic Aqueous
Heatbath Corporation	Multi-Kleen 1568	Alkaline Aqueous
Heatbath Corporation	Power Wash Cleaner BCR	Alkaline Aqueous
Heatbath Corporation	Uni Kleen 10	Powder Detergent
Hotsy Cleaning Systems	Hotsy Detergents Tub & Pressure Wash	Alkaline Aqueous
Houghton International	Certa Kleen 5387	Alkaline Aqueous
Houghton International	MTC 53	Alkaline Aqueous
Hubbard Hall Inc	Aquasonic 201	Alkaline Aqueous
Hubbard Hall Inc	Ram Charger	Alkaline Aqueous
Hurri Kleen	Hot Immersion Degreaser	Alkaline Aqueous
Hurri Kleen	Parts Washer Degreaser	Alkaline Aqueous
Hurri Kleen	Special Degreaser	Alkaline Aqueous
Innovative Organics Inc	Amber Clean SC 11	Neutral Aqueous
Innovative Organics Inc	Amberclean 527 L	Alkaline Aqueous
Innovative Organics Inc	Amberclean L 12	Alkaline Aqueous
Innovative Organics Inc	Amberclean Q3	Alkaline Aqueous
International Products Corporation	LF 2100	Alkaline Aqueous
International Products Corporation	Micro	Alkaline Aqueous
International Products Corporation	Micro 90	Alkaline Aqueous
International Products Corporation	Surface Cleanse 930	Neutral Aqueous
JDI Inc	Mirachem 500 RTU	Alkaline Aqueous
Kyzen Corporation	Metalnox M6314	Alkaline Aqueous
Kyzen Corporation	Metalnox M6960	nPB
LPS Laboratories	LPS Precision Clean	Alkaline Aqueous
MacDermid	ND 17	Alkaline Aqueous
MacDermid	ND LF Supreme	Alkaline Aqueous

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MacDermid	ND Supreme	Alkaline Aqueous
Magnaflux	Daraclean 200	Alkaline Aqueous
Magnaflux	Daraclean 212	Neutral Aqueous
Magnaflux	Daraclean 232	Alkaline Aqueous
Magnaflux	Daraclean 235	Neutral Aqueous
Magnaflux	Daraclean 282	Alkaline Aqueous
Magnaflux	Daraclean 282 GF	Alkaline Aqueous
Magnaflux	Daraclean 283	Alkaline Aqueous
Magnaflux	Zyglo Emulsifier ZR 10B	Neutral Aqueous
Man Gill Chemical	Gillite 0650 CI	Alkaline Aqueous
Matchless Metal Polish Company	MC 132	Alkaline Aqueous
Matchless Metal Polish Company	MC 580	Alkaline Aqueous
Metabolix Inc	Metabolix E3HB	Ester
Micro Care	Flux Remover C	HFE
Micro Care	Heavy Duty Degreaser C	HFE
Mirachem Corporation	Mirachem 500	Alkaline Aqueous
National Diagnostic	Histo Clear	Terpene
National Diagnostic	Opti Clear	Terpene
Nensco Supply	DT 600 Press Wash	Alkaline Aqueous
North Atlantic Bio Industries	NAB 9000	Neutral Aqueous
Novamax Technologies Inc	Spectrum APC	Alkaline Aqueous
Novamax Technologies Inc	Spectrum BCR	Caustic
Oakite Products	Citradet	Semi-Aqueous
Oakite Products	Inproclean 2000	Alkaline Aqueous
Oakite Products	Inproclean 2300	Alkaline Aqueous
Oakite Products	Inproclean 3800	Alkaline Aqueous
Oakite Products	Inproclean 4000 T	Terpene-Organic
Oakite Products	Inproclean 61 B	Powder Detergent
Oakite Products	Okemclean	Caustic
Phase III Inc	California Parts Washer Solution	Neutral Aqueous
	Solvon IP	nPB

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Poly Systems USA Inc		
Poly Systems USA Inc	Solvon PB	nPB
S & S Industrial Services	Spray Clean 400 T	Alkaline Aqueous
Safe Science	Safe Science Concrete/ Graffiti (Industrial)	Alkaline Aqueous
Savogran	Dirtex Prepaint Cleaner	Alkaline Aqueous
Simple Green	Crystal Simple Green Industrial Cleaner	Alkaline Aqueous
Simple Green	Simple Green D	Alkaline Aqueous
Sky Products Company Inc.	Cleaner #10	Alkaline Aqueous
Solutia Inc	Santosol DME	Ester
Solvent Kleene Inc	D Greeze 1000	Petroleum Distillate
Solvent Kleene Inc	D Greeze 500 LO	Organic
Solvent Kleene Inc	D-Greeze GL 46	Alkaline Aqueous
Solvent Kleene Inc	D-Greeze GL 55	Alkaline Aqueous
SOQ Environmental Technology	Ecomate FN	Alkaline Aqueous
Tarksol Inc	Tarksol HTF 10 B	Terpene
Tarksol Inc	Tarksol HTF 40	Terpene-Semi-Aqueous
Tech Spray	Concentrated Aqueous Defluxer	Caustic
Texo Corporation	Texolite 1734 XL	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
Tomah Products	Tomadyne 101 LF	Neutral Aqueous
Tomah Products	Tomadyne 102	Neutral Aqueous
Tomah Products	Tomadyne Mix	Neutral Aqueous
Tower Products Inc	Tower 270 Cleaner Concentrate	Alkaline Aqueous
United Laboratories	United 450 All Clear	Enzymatic/Microbial

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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	Polychem PW 147	Alkaline Aqueous
US Polychem Corporation	Polychem Ultra CR	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	MD 6000	Alkaline Aqueous
Valtech Corporation	Valtron SP 2200	Alkaline Aqueous
Valtech Corporation	Valtron SP 2250 2LF	Alkaline Aqueous
Valtech Corporation	Valtron SP 2275	Neutral Aqueous
Valtech Corporation	Valtron SP 2700 KB	Acidic Aqueous
Vertec BioSolvents	VertecBio Gold 2	Organic
Warren Chemical Company	Sea Wash 700 New	Neutral Aqueous
Warren Chemical Company	Sea Wash 700 Old	Neutral Aqueous
Warren Chemical Company	Sea Wash Cleaner	Alkaline Aqueous
Warren Chemical Company	Sea Wash Neutral	Neutral Aqueous
Watson Technical Associates	Formula 7100	Alkaline Aqueous
Watson Technical Associates	Watson Formula 7000	Alkaline Aqueous
Watson Technical Associates	Watson Formula 7300	Alkaline Aqueous
Watson Technical Associates	Watson Formula 9000	Alkaline Aqueous
Westford Chemical Corporation	Biosolve	Neutral Aqueous

Summary:

Substrates:	Carbon Steel, Stainless Steel, Steel				
Contaminants:	Buffing/Polishing Compounds, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
No Specific Vendor	Supplied alternatives list		0.00	☐	

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.