CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2003

DateRun: 10/29/2003

Experimenters: Jason Marshall

ClientType: TUR Agency

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Oil

Cleaning Methods:

Analytical Methods:

Purpose: To generate a list of alternative for mineral oil removal from stainless steel

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 following products have been used successfully for mineral oil removal for various substrates:

Total	CompanyName	ProductName
3	Brulin Corporation	Formula 815 GD
3	Innovative Organics Inc	Amberclean 527 L
3	Today & Beyond	Beyond 2004
3	Valtech Corporation	Valtron SP 2275
2	CAE Cleaning Technologies	Evercycle 2000
2	Texo Corporation	Texo Cleaner 127
1	Bio Chem Systems	Solsafe 245
1	Bio Chem Systems	Green Stuff (6325)
1	Buckeye International	Shopmaster LPH
1	Gemtek Products	SC Aircraft & Metal Cleaner

In addition, several products have been successful in various oil removal from stainless steel coupons. Over 100 products have been tested. The top 22 products are listed below.

Total	Company Name	Product Name
8	Emkay Chemical Company	Safety Wash Clear
8	Innovative Organics Inc	Amberclean L 12
7	ITW Fluid Products Group	AccuClean
6	Brulin Corporation	Formula 815 GD
6	Chemical Technologies	Green Thunder
5	Drummond American	Keynote
5	Heatbath Corporation	Power Wash Cleaner BCR
5	Magnaflux	Daraclean 282
5	Magnaflux	Daraclean 282 GF
5	Mirachem Corporation	Mirachem 500
5	Oakite Products	Oakite 77
5	Valtech Corporation	Valtron SP 2250 2LF
4	Drummond American	Clout
4	Ecolink	Heavy Weight Non Butyl Detergent

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4	Ensolve Biosystems Inc	Grease Feast Plus
4	New Pig Corporation	New Pig Degreaser
4	Safe Science	Safe Science Concrete/Graffiti (Industrial)
4	United Laboratories	United 450 All Clear
4	US Polychem Corporation	Polyspray Jet 790 P
4	Warren Chemical Company	Sea Wash 700
4	Warren Chemical Company	Sea Wash Neutral
4	Westford Chemical Corporation	Biosolve
3	Alconox Inc	Citranox
3	AW Chesterton	KPC 820 N
3	Bio Chem Systems	Bio T V 50
3	Branson	GP
3	Calgon Corporation	AK 6215
3	Chem Free Corporation	Ozzy Juice SW 3
3	Heatbath Corporation	Alu-Kleen 36
3	Hubbard Hall Inc	Aquasonic 201
3	Magnaflux	Daraclean 212
3	Matchless Metal Polish Company	MC 580
3	North Atlantic Bio Industries	NAB 9000
3	Oakite Products	Inproclean 3800
3	Today & Beyond	Beyond 2005
3	Today & Beyond	Beyond 2009
3	Twin Rivers Corp	Methyl Ester 1618
3	Water	Water
2	Abatement Technology	Bio Might 100
2	Alconox Inc	Det-O-Jet
2	Bio Chem Systems	Green Stuff (6325)
2	Calgon Corporation	Geo Guard 2215
2	Chemstation	Green Stuff Neutral
2	Church & Dwight	Armakleen M Auto
2	Cleansafe Solutions	Solution 2000
2	Diversey	Twist
2	Ecolink	Safe Strip
2	Ecolink	Vortex
2	Fine Organic Corporation	FO 2085 M
2	Gemtek Products	SC Supersolve
2	Heatbath Corporation	Uni Kleen 10
2	Hurri Kleen	Parts Washer Degreaser
2	International Products Corporation	Micro 90
2	JDI Inc	Mirachem 500 RTU
2	MacDermid	ND 17
2	Magnaflux	Daraclean 283
2	Man Gill Chemical	Gillite 0650 Cl
2	Oakite Products	Citradet

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2	Oakite Products	Inproclean 2500
2	Oakite Products	Inproclean 4000 T
2	Savogran	Dirtex Prepaint Cleaner
2	Solvent Kleene Inc	D Greeze 1000
2	Solvent Kleene Inc	D Greeze 500 LO
2	Solvent Kleene Inc	D-Greeze GL 55
2	Today & Beyond	Beyond 2001
2	Today & Beyond	Beyond 2002
2	Today & Beyond	Beyond 2003
2	Turco Products Inc	Turco 5948 DPM
2	Warren Chemical Compnay	Sea Wash 8 No Force
2	Watson Technical Associates	Watson Formula 7300
1	Alconox Inc	Liquinox
1	Baum's Castorine Company Inc	EZE Oil-Grease Cleaner
1	Bio Chem Systems	Bio T 200 A
1	Bio Chem Systems	Bio T 300 B
1	Bio Chem Systems	Bio T Parts Washer NR
1	Buckeye International	Shopmaster
1	Calgon Corporation	RT 806
1	Chem Free Corporation	Ozzy Juice SW 1
1	Environmental Services	TASC
1	Equinox	Natural Solutions
1	Finger Lakes Chemicals	1-1-02
1	Finger Lakes Chemicals	Resineater
1	Finish Line Technologies Inc	Bio Degradable Degreaser
1	Gemtek Products	SC Aircraft & Metal Cleaner
1	General Chemical Corporation	Aquaclean 4784
1	Heatbath Corporation	Multi-Kleen 1568
1	Heatbath Corporation	MultiKleen LX 1573
1	Hubbard Hall Inc	Ram Charger
1	International Bio System	Bio Z
1	Kyzen Corporation	Ionox FCR
1	Kyzen Corporation	Ionox HC 2
1	MacDermid	ND LF Supreme
1	Man Gill Chemical	Gillite 160 X
1	Master Chemical Corporation	Trim Rinse 200
1	Matchless Metal Polish Company	MC 132
1	Safe Science	Safe Science Engine Degreaser (Industrial)
1	Texo Corporation	Texolite 1734 XL
1	Today & Beyond	Beyond 2004
1	Tower Products Inc	Tower 270 Cleaner Concentrate
1		Polyspray Jet 790 C

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	US Polychem Corporation	
1	Valtech Corporation	Valtron SP 2200
1	Watson Technical Associates	Watson Formula 9000

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.