CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2005
DateRun:	10/25/2005
Experimenters:	Jason Marshall
ClientType:	Machinery Manufacturer
ProjectNumber:	Project #1
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Oil
Cleaning Methods:	Manual Wipe
Analytical Methods:	
Purpose:	To generate a list of alternatives to heptane for removing oil from aluminum parts.
Experimental Procedure:	Using the laboratory's database for solvent cleaning substitution, the lab generated a lists of products that have been used to clean oil from aluminum parts using manual wiping. In addition, vendor supplied data was also searched to generate additional products.
Results:	The first table lists the products that have been tested at SSL for oil removal from aluminum parts using manual wiping. The second table are products that have been tested for oil removal from aluminum parts using various methods (immersion, ultrasonics).

Products Matching All Search Criteria
Contaminant: Oil
Substrate: Aluminum
Equipment: Manual wipe

CompanyName	ProductName
Bo Chem Company	T 110
Gemtek Products	SC 1000
Hotsy Cleaning Systems	Tubmate All Purpose

Products Tested at SSL for contaminant and substrate
Contaminant: Oil
Substrate: Aluminum

CompanyName	ProductName
3M	HFE 71 De
3M	HFE 7100
3M	HFE 7200
Abatement Technology	Bio Might 100
AGA Chemical	AK 225
Alconox Inc	Citranox
Alconox Inc	Detergent 8
Alconox Inc	Det-O-Jet
Armex Cleaning and Coating Removal Systems	Sodium Bicarbonate
AW Chesterton	KPC 820 N
BCS Company	Ultra Blue 100
Bio Chem Systems	Bio T 200 A
Bio Chem Systems	Bio T 300 B
Bio Chem Systems	Bio T Max
Bio Chem Systems	Bio T Parts Washer NR
Bio Chem Systems	Bio T V 50
Bio Chem Systems	Green Stuff (6325)
Bo Chem Company	T 110
Brulin Corporation	Aquavantage 1400
Brulin Corporation	Brulin 63 G
Brulin Corporation	Formula 815 GD
CAE Cleaning Technologies	Evercycle UCI

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Calgon Corporation	AK 6215
Calgon Corporation	Geo Guard 2215
Calgon Corporation	RT 806
Chem Free Corporation	Ozzy Juice SW 1
Chem Free Corporation	Ozzy Juice SW 3
Chemical Technologies	Green Thunder
Chemstation International	Green Stuff Neutral
Cleansafe Solutions	Solution 2000
Dow Chemical Company	OS 10
Dow Chemical Company	OS 20
Dow Chemical Company	OS 30
Drummond America Corporation	Clout
Drummond America Corporation	Keynote
DuPont	Vertrel CCA
DuPont	Vertrel MCA
Ecolink	Heavy Weight Non Butyl Detergent
Ecolink	Positron
Ecolink	Universal Steam Cleaner
Ecolink	Vortex
Emkay Chemical Company	Safety Wash Clear
Emkay Chemical Company	Safety Wash CRC
Ensolve Biosystems Inc	Grease Feast Plus
Enviro Tech International Inc	Ensolv
Enviro Tech International Inc	Ensolv A
Environmental Services	TASC
Environmental Technology	RB Degreaser Cleaner
Finger Lakes Chemical	Resineater
Finish Line Technologies Inc	Bio Degradable Degreaser
Gemtek Products	SC 1000
Gemtek Products	SC Aircraft & Metal Cleaner
Gemtek Products	SC Supersolve
General Chemical Corporation	Aluminex 5834
General Chemical Corporation	Aquaclean 4784
Heatbath Corporation	Alu-Kleen 36
Heatbath Corporation	Multi-Kleen 1568
Heatbath Corporation	Power Wash Cleaner BCR
Heatbath Corporation	Uni Kleen 10
Hotsy Cleaning Systems	Tubmate All Purpose
Hubbard Hall Inc	Aquasonic 201
Hubbard Hall Inc	Ram Charger
Hurri Kleen Corportion	Hot Immersion Degreaser
Hurri Kleen Corportion	Parts Washer Degreaser
Hurri Kleen Corportion	Special Degreaser
Inland Technologies Inc	Citrasafe
Innovative Organics Inc	Amber Clean SC 11

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Innovative Organics Inc	Amberclean L 12
Innovative Organics Inc	Amberclean Q3
International Products Corporation	Micro 90
International Products Corporation	Surface Cleanse 930
ITW Fluid Products Group	AccuClean
JDI Inc	Mirachem 500 RTU
Kleer Flo Company	Grease Off 2
Kyzen Corporation	Ionox FCR
Kyzen Corporation	Ionox HC 2
Kyzen Corporation	Metalnox M6314
Kyzen Corporation	Metalnox M6960
MacDermid Industrial Products	ND LF Supreme
Magnaflux	Daraclean 200
Magnaflux	Daraclean 212
Magnaflux	Daraclean 235
Magnaflux	Daraclean 282
Magnaflux	Daraclean 282 GF
Magnaflux	Daraclean 283
Magnum Research Corporation	Aluminum Aerowash
Man Gill Chemical Company	Gillite 0650 Cl
Man Gill Chemical Company	Gillite 1156
Man Gill Chemical Company	Gillite 160 X
Matchless Metal Polish Company	MC 132
Matchless Metal Polish Company	MC 580
Micro Care	Flux Remover C
Micro Care	Heavy Duty Degreaser C
Mirachem Corporation	Mirachem 500
New Pig Corporation	Hoofmark All Purpose Cleaner & Degreaser
New Pig Corporation	Hoofmark Industrial Cleaner
New Pig Corporation	New Pig Degreaser
North Atlantic Bio Industries	NAB 9000
Oakite Products	Citradet
Oakite Products	Inproclean 2000
Oakite Products	Inproclean 2500
Oakite Products	Inproclean 3800
Oakite Products	Oakite 77
Oakite Products	Oakite Low Heat Cleaner 1
Oakite Products	Okemclean
Occidental Chemical Corporation	OXSOL 100
PCI of America	Hurrisafe 9450
Permatex Industrial Corporation	Natural Blue
Poly Systems USA Inc	Solvon IP
Poly Systems USA Inc	Solvon PB
Safe CleanUp Solutions	Super Neutral
Savogran Company	

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	Dirtex Prepaint Cleaner
Simple Green	All Purpose Cleaner/ Degreaser
Smart Sonic Corp	440 R SMT Detergent
Solvent Kleene Inc	D Greeze 1000
Solvent Kleene Inc	D-Greeze GL 55
SWR Corporation	SWR One
Texo Corporation	Texolite 1734 XL
Today & Beyond	Beyond 2001
Today & Beyond	Beyond 2002
Today & Beyond	Beyond 2003
Today & Beyond	Beyond 2004
Today & Beyond	Beyond 2005
Today & Beyond	Beyond 2009
Tower Products Inc	Tower 270 Cleaner Concentrate
Turco Products Inc	Turco 5948 DPM
United Laboratories International	United 450 All Clear
US Polychem Corporation	87 RB
US Polychem Corporation	Hydropurge HPL 790
US Polychem Corporation	Polychem A 2000 XS
US Polychem Corporation	Polyspray Jet 790 C
Valtech Corporation	Valtron SP 2250 2LF
Valtech Corporation	Valtron SP 2275
Warren Chemical Company	Sea Wash 700 New
Warren Chemical Company	Sea Wash 700 Old
Warren Chemical Company	Sea Wash 8 New
Warren Chemical Company	Sea Wash 8 No Force
Warren Chemical Company	Sea Wash Neutral
Water	DI Water
Watson Technical Associates	Formula 7100
Watson Technical Associates	Watson Formula 7000
Watson Technical Associates	Watson Formula 7001-CP
Watson Technical Associates	Watson Formula 7300
Watson Technical Associates	Watson Formula 9000
Westford Chemical Corporation	Biosolve

Summary:

Conclusion: There are a wide range of products that could be used for the specified oil removal from aluminum parts using manual wiping. The following table contains a list of products selected for the previous tables. The have been used for a wide range of application at SSL.

Company Name	Product Name
Brulin Corporation	Formula 815 GD
Warren Chemical Company	Sea Wash 8 No Force
Oakite Products	Inproclean 3800

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Magnaflux	Daraclean 282 GF
Gemtek Products	SC Aircraft & Metal Cleaner
Heatbath Corporation	Uni Kleen 10
Church & Dwight Co Inc	Armakleen M Auto
Solvent Kleene Inc	D Greeze 500 LO
Bio Chem Systems	Bio T V 50
1st Envirosafety	Organic Cleaner/ Degreaser
Buckeye International	Shopmaster
US Polychem Corporation	Polyspray Jet 790 XS

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.