CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 12/12/2005

Experimenters: Jason Marshall

ClientType: Church

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods:

Analytical Methods:

Purpose: To generate a list of alternatives to TCE for aircraft and automotive part cleaning.

Experimental Procedure: Using the laboratory's database for solvent cleaning substitution, the lab generated a list of products that have been used to replace TCE in various cleaning applications.

Results: The Table contains products that have tested successfully for TCE replacement. In addition, testing information for Client Number 28 (Aircraft Parts Manufacturer) was provided.

Company	Product
3M	HFE 71 De
3M	HFE 7100
3M	HFE 7200
AG Environmental Products	Canola Gold CE110
AGA Chemical	AK 225
Alconox Inc	Alcojet
Amax Corporation	Safety First
Ardrox Inc	6333
AW Chesterton	278 Super Solv
AW Chesterton	KPC 820 N
Bio Chem Systems	Bio T 200 A
Bio Chem Systems	Bio T 300 B
Bio Chem Systems	Bio T Max
Bio Chem Systems	Green Stuff (6325)
Brulin Corporation	Aquavantage 1400
Brulin Corporation	Compliance
Brulin Corporation	Formula 815 GD
Calgon Corporation	Geo Guard 2215
Calgon Corporation	Geo Guard 3015
Chrisal USA Inc	Super CMF 240
Church & Dwight Co Inc	Armaklean E 2002
Cleaning Systems	Release
Crest Ultrasonics	Crest 14
Dow Chemical Company	OS 10
Dow Chemical Company	OS 20
Dow Chemical Company	OS 30
DuPont	DBE 5
DuPont	Vertrel CCA
DuPont	Vertrel MCA
Dynamold Solvents Inc	DS 104
Dynamold Solvents Inc	DS 108
Ecolink	Vortex
	Safety Wash CRC

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Emkay Chemical Company	
Enviro Tech International	Ensolv
Enviro Tech International	Ensolv A
Fine Organic Corporation	FO 2085 M
Florida Chemical Company	Citrus Burst 7
Gemtek Products	Maxi Solv
Gemtek Products	SC Aircraft & Metal Cleaner
Hubbard Hall Inc	Ultrasoak 127
Innovative Organics Inc	Amberclean L 12
International Products Corp	Micro 90
International Products Corp	Surface Cleanse 930
Kyzen Corporation	Ionox HC 2
Kyzen Corporation	Metalnox M6314
Kyzen Corporation	Metalnox M6960
Lifetime Solutins Ltd	Commercial All Purpose
LPS Laboratories	LPS Precision Clean
MacDermid Industrial	ND 17
Magnaflux	Daraclean 232
Magnaflux	Daraclean 282
Magnaflux	Daraclean 282 GF
Magnaflux	Daraclean 283
Magnaflux	Daraguard 416
Matchless Metal Polish Co	MC 132
Metabolix Inc	Metabolix E3HB
Micro Care	Flux Remover C
Micro Care	Heavy Duty Degreaser C
National Diagnostic	Opti Clear
Oakite Products	Inproclean 2000
Oakite Products	Inproclean 3800
Oakite Products	Inproclean 4000 T
PCI of America	Hurrisafe 9450
Pentone Corporation	Citrikleen XPC
Petroferm Inc	Lenium ES
Petroferm Inc	Lenium GS
Poly Systems USA Inc	Solvon IP
Poly Systems USA Inc	Solvon PB
Sky Products Company Inc	Cleaner #10
Solvent Kleene Inc	D Greeze 1000
Solvent Kleene Inc	D Greeze 500 LO
Soysolv Industrial Products	Soysolv II
Texo Corporation	Texolite 1734 XL
Today & Beyond	Beyond 2001
Today & Beyond	Beyond 2003
Today & Beyond	Beyond 2008
Twin Rivers Technologies	Methyl Ester 1618
US Polychem Corporation	Polychem DEOX 007

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US Polychem Corporation	Polyspray Jet 790 P
US Polychem Corporation	Polyspray Jet 790 XS
Warren Chemical Company	Sea Wash 8 New

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.