CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 12/06/2001

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum, Stainless Steel

PartType: Coupon

Contaminants: Cutting/Tapping Fluids

Cleaning Methods: Ultrasonics

Analytical Methods:

Purpose: Generate list of alternative products for cleaning cutting fluids

Experimental Procedure: Database search of vendor and laboratory products for products that can be used to remove cutting fluids from aluminum (40%) and stainless steel (60%) parts using ultrasonics or immersion cleaning. Contaminant: Fuchs Renocut 471 Box-contains 55% mineral oil.

Results:

CompanyName	ProductName	Classification	Efficiency	Contaminant	Client	Trial#	Substrate	Equipment
Alconox, Inc.	Det-O-Jet	Alkaline Aqueous	100	Cutting Fluid	153	4	Stainless Steel	Immersion/ Soak
Baum's Castorine Co Inc	EZE Oil-Grease Cleaner	Alkaline Aqueous	101	Cutting Fluid	153	4	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	94.36	Cutting Fluid	13	0	Aluminum	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	94.36	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous		Cutting Fluid	28	0	Aluminum	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	98.23	Cutting Fluid	49	1	Aluminum	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	98.23	Cutting Fluid	49	1	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous		Cutting Fluid	67	0	Aluminum	Ultrasonics
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	99.27	Cutting Fluid	100	4	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	101.11	Cutting Fluid	100	4	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	101.08	Cutting Fluid	100	4	Stainless Steel	Immersion/ Soak
Brulin Corporation	Formula 815 GD	Alkaline Aqueous	94	Cutting Fluid	153	58	Aluminum	Immersion/ Soak
Buckeye International	Shopmaster	Alkaline Aqueous	83.64	Cutting Fluid	25	0	Stainless Steel	Immersion/ Soak
Calgon Corporation	AK 6215	Alkaline Aqueous	86.67	Cutting Fluid	49	1	Aluminum	Immersion/ Soak
Calgon Corporation	AK 6215	Alkaline Aqueous	86.67	Cutting Fluid	49	1	Stainless Steel	Immersion/ Soak
Calgon Corporation	Geo Guard 2215	Alkaline Aqueous	93.13	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak
Calgon Corporation	Geo Guard 2215	Alkaline Aqueous	93.13	Cutting Fluid	13	0	Aluminum	Immersion/ Soak
Calgon Corporation	Geo Guard 2215	Alkaline Aqueous	79	Cutting Fluid	74	0	Aluminum	Immersion/ Soak
Calgon Corporation	Geo Guard 2215	Alkaline Aqueous	93.84	Cutting Fluid	92	2	Stainless Steel	Immersion/ Soak
Calgon Corporation	Geo Guard 2215	Alkaline Aqueous		Cutting Fluid	92	3	Stainless Steel	Immersion/ Soak
Calgon Corporation	SMS 206 K	Alkaline Aqueous	99.58	Cutting Fluid	109	0	Aluminum	Immersion/ Soak

CLEANING LABORATORY EVALUATION SUMMARY

Calgon Corporation	SMS 206 K	Alkaline Aqueous	98.6	Cutting Fluid	109	1	Aluminum	Immersion/ Soak
Calgon Corporation	SMS 206 K	Alkaline Aqueous	100.18	Cutting Fluid	109	2	Aluminum	Immersion/ Soak
Calgon Corporation	SMS 206 K	Alkaline Aqueous	99.32	Cutting Fluid	109	4	Aluminum	Immersion/ Soak
Chemical Technologies	Green Thunder	Alkaline Aqueous	98.48	Cutting Fluid	153	66	Stainless Steel	Immersion/ Soak
Chemical Technologies	Green Thunder	Alkaline Aqueous	98.48	Cutting Fluid	153	66	Aluminum	Immersion/ Soak
Chrisal USA, Inc.	Super CMF 240	Alkaline Aqueous	99	Cutting Fluid	153	58	Aluminum	Immersion/ Soak
Church & Dwight	Armakleen M Auto	Alkaline Aqueous	93.92	Cutting Fluid	49	0	Stainless Steel	Ultrasonics
Church & Dwight	Armakleen M Auto	Alkaline Aqueous	98	Cutting Fluid	49	6	Stainless Steel	Ultrasonics
Cleaning Systems	Release	Alkaline Aqueous	89.99	Cutting Fluid	13	0	Aluminum	Immersion/ Soak
Cleaning Systems	Release	Alkaline Aqueous	89.99	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak
Ecolink	Vortex	Semi-Aqueous	99.69	Cutting Fluid	74	2	Aluminum	Immersion/ Soak
Ecolink	Vortex	Semi-Aqueous		Cutting Fluid	92	1	Stainless Steel	Immersion/ Soak
Ecolink	Universal Steam Cleaner	Alkaline Aqueous	64.84	Cutting Fluid	153	67	Stainless Steel	Immersion/ Soak
Ecolink	Universal Steam Cleaner	Alkaline Aqueous	64.84	Cutting Fluid	153	67	Aluminum	Immersion/ Soak
Envirosolutions, Inc.	Green Stuff (6325)	Alkaline Aqueous		Cutting Fluid	154	9	Aluminum	Ultrasonics
Envirosolutions, Inc.	Green Stuff (6325)	Alkaline Aqueous		Cutting Fluid	154	9	Stainless Steel	Ultrasonics
Envirosolutions, Inc.	Bio T V-50	Terpene	84.37	Cutting Fluid	153	67	Stainless Steel	Immersion/ Soak
Envirosolutions, Inc.	Bio T V-50	Terpene	84.37	Cutting Fluid	153	67	Aluminum	Immersion/ Soak
Fine Organic Corporation	FO 2085 M	Alkaline Aqueous		Cutting Fluid	47	0	Stainless Steel	Immersion/ Soak
Fine Organic Corporation	FO 2085 M	Alkaline Aqueous		Cutting Fluid	47	1	Stainless Steel	Ultrasonics
Gemtek Products	SC Aircraft & Metal Cleaner	Alkaline Aqueous	99.69	Cutting Fluid	100	1	Stainless Steel	Immersion/ Soak
Gemtek Products	SC Aircraft & Metal Cleaner	Alkaline Aqueous	98.77	Cutting Fluid	109	0	Aluminum	Immersion/ Soak
Heatbath Corporation	Uni Kleen 10	Powder Detergent	97.6	Cutting Fluid	153	84	Stainless Steel	Ultrasonics
Hubbard Hall Inc	Aquasonic 201	Alkaline Aqueous	40.59	Cutting Fluid	153	66	Stainless Steel	Immersion/ Soak
Hubbard Hall Inc	Aquasonic 201	Alkaline Aqueous	40.59	Cutting Fluid	153	66	Aluminum	Immersion/ Soak
Innovative Organics Inc	Amberclean L 12	Alkaline Aqueous	92.03	Cutting Fluid	153	66	Stainless Steel	Immersion/ Soak
Innovative Organics Inc	Amberclean L 12	Alkaline Aqueous	92.03	Cutting Fluid	153	66	Aluminum	Immersion/ Soak
ITW Fluid Products Group	Accu-Clean	Alkaline Aqueous	77.44	Cutting Fluid	153	66	Stainless Steel	Immersion/ Soak
ITW Fluid Products Group	Accu-Clean	Alkaline Aqueous	77.44	Cutting Fluid	153	66	Aluminum	Immersion/ Soak
Kyzen Corporation	Ionox FCR	Semi-Aqueous		Cutting Fluid	54	1	Aluminum	Ultrasonics
MacDermid	ND 17	Alkaline Aqueous	94.84	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak

CLEANING LABORATORY EVALUATION SUMMARY

MacDermid	ND 17	Alkaline Aqueous	94.84	Cutting Fluid	13	0	Aluminum	Immersion/ Soak
MacDermid	ND 17	Alkaline Aqueous	98.21	Cutting Fluid	49	0	Stainless Steel	Ultrasonics
MacDermid	ND 17	Alkaline Aqueous		Cutting Fluid	49	1	Stainless Steel	Ultrasonics
MacDermid	ND LF Supreme	Alkaline Aqueous	94.9	Cutting Fluid	153	84	Stainless Steel	Ultrasonics
Man Gill Chemical	Gillite 160 X	Alkaline Aqueous	97	Cutting Fluid	153	0	Stainless Steel	Immersion/ Soak
Master Chemical Corp	Trim Rinse 100	Alkaline Aqueous	97	Cutting Fluid	153	0	Stainless Steel	Immersion/ Soak
Master Chemical Corp	Trim Rinse 200	Alkaline Aqueous	101	Cutting Fluid	153	4	Stainless Steel	Immersion/ Soak
Matchless Metal Polish Co	MC 580	Alkaline Aqueous		Cutting Fluid	57	0	Aluminum	Ultrasonics
Matchless Metal Polish Co	MC 580	Alkaline Aqueous	99.73	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
Matchless Metal Polish Co	MC 580	Alkaline Aqueous	100.24	Cutting Fluid	100	1	Stainless Steel	Immersion/ Soak
Matchless Metal Polish Co	MC 580	Alkaline Aqueous	98.84	Cutting Fluid	100	2	Stainless Steel	Immersion/ Soak
Matchless Metal Polish Co	MC 580	Alkaline Aqueous	99.13	Cutting Fluid	100	2	Stainless Steel	Immersion/ Soak
Novomax Technologies Inc	Spectrum APC	Alkaline Aqueous	90	Cutting Fluid	153	0	Stainless Steel	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	97.54	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	97.54	Cutting Fluid	13	0	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	95.52	Cutting Fluid	49	0	Stainless Steel	Ultrasonics
Oakite Products	Inproclean 3800	Alkaline Aqueous	99.27	Cutting Fluid	100	1	Stainless Steel	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	99.74	Cutting Fluid	109	0	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	99.14	Cutting Fluid	109	1	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	99.54	Cutting Fluid	109	2	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	98.4	Cutting Fluid	109	4	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous	99	Cutting Fluid	153	58	Aluminum	Immersion/ Soak
Oakite Products	Inproclean 3800	Alkaline Aqueous		Cutting Fluid	154	9	Aluminum	Ultrasonics
Oakite Products	Inproclean 3800	Alkaline Aqueous		Cutting Fluid	154	9	Stainless Steel	Ultrasonics
Oakite Products	Inproclean 4000 T	Organic		Cutting Fluid	92	1	Stainless Steel	Immersion/ Soak
Oakite Products	Inproclean 4000 T	Terpene		Cutting Fluid	92	1	Stainless Steel	Immersion/ Soak
Oakite Products	Oakite 77	Powder Detergent	99.03	Cutting Fluid	153	67	Stainless Steel	Immersion/ Soak
Oakite Products	Oakite 77	Powder Detergent	99.03	Cutting Fluid	153	67	Aluminum	Immersion/ Soak
Permatex Industrial Corp	Natural Blue	Alkaline Aqueous	99.74	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
Safe CleanUp	Super Netural	Enzymatic/ Microbial	89.5	Cutting Fluid	61	2	Aluminum	Immersion/ Soak
Safe CleanUp	Super Netural	Enzymatic/ Microbial	99.89	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
Savogran	Dirtex Prepaint Cleaner	Alkaline Aqueous	99.74	Cutting Fluid	100	1	Stainless Steel	Immersion/ Soak

CLEANING LABORATORY EVALUATION SUMMARY

Savogran	Dirtex Prepaint Cleaner	Alkaline Aqueous	87	Cutting Fluid	153	0	Stainless Steel	Immersion/ Soak
Solvent Kleene, Inc.	D-Greeze 500 LO	Organic		Cutting Fluid	92	1	Stainless Steel	Immersion/ Soak
SWR Corp	SWR One	Alkaline Aqueous	99.92	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
SWR Corp	SWR One	Alkaline Aqueous	98	Cutting Fluid	153	58	Aluminum	Immersion/ Soak
Today & Beyond	Beyond-2001	Alkaline Aqueous		Cutting Fluid	154	9	Aluminum	Ultrasonics
Today & Beyond	Beyond-2001	Alkaline Aqueous		Cutting Fluid	154	9	Stainless Steel	Ultrasonics
Twin Rivers Corp	Methyl Ester 1618	Ester	93.03	Cutting Fluid	25	0	Stainless Steel	Immersion/ Soak
Twin Rivers Corp	Methyl Ester 1618	Ester		Cutting Fluid	92	1	Stainless Steel	Immersion/ Soak
U.S. Polychem Corp.	Polychem A 2000 XS	Alkaline Aqueous		Cutting Fluid	57	0	Aluminum	Ultrasonics
U.S. Polychem Corp.	Polychem A 2000 XS	Alkaline Aqueous	99.77	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 P	Alkaline Aqueous	97.5	Cutting Fluid	92	2	Stainless Steel	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 P	Alkaline Aqueous		Cutting Fluid	92	3	Stainless Steel	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 P	Alkaline Aqueous	96	Cutting Fluid	153	58	Aluminum	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 XS	Alkaline Aqueous	99.44	Cutting Fluid	109	0	Aluminum	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 XS	Alkaline Aqueous	95.8	Cutting Fluid	109	1	Aluminum	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 XS	Alkaline Aqueous	100.73	Cutting Fluid	109	2	Aluminum	Immersion/ Soak
U.S. Polychem Corp.	Polyspray Jet 790 XS	Alkaline Aqueous	99.68	Cutting Fluid	109	4	Aluminum	Immersion/ Soak
Valtech Corporation	Valtron SP 2200	Alkaline Aqueous		Cutting Fluid	100	0	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 212	Neutral Aqueous	99.25	Cutting Fluid	49	0	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 232	Alkaline Aqueous	99.05	Cutting Fluid	109	0	Aluminum	Immersion/ Soak
W.R. Grace & Co.	Daraclean 235	Neutral Aqueous		Cutting Fluid	11	0	Aluminum	Ultrasonics
W.R. Grace & Co.	Daraclean 282	Alkaline Aqueous		Cutting Fluid	40	2	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282	Alkaline Aqueous		Cutting Fluid	40	3	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282	Alkaline Aqueous	81.6	Cutting Fluid	74	0	Aluminum	Immersion/ Soak
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	28	0	Aluminum	Immersion/ Soak
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	47	0	Stainless Steel	Immersion/ Soak
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	47	1	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	47	2	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	47	2	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	47	3	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous		Cutting Fluid	67	0	Aluminum	Ultrasonics
W.R. Grace & Co.	Daraclean 282 GF	Alkaline Aqueous	96	Cutting Fluid	153	58	Aluminum	Immersion/ Soak

CLEANING LABORATORY EVALUATION SUMMARY

W.R. Grace & Co.	Daraclean 283	Alkaline Aqueous		Cutting Fluid	10	0	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 283	Alkaline Aqueous		Cutting Fluid	10	1	Stainless Steel	Ultrasonics
W.R. Grace & Co.	Daraclean 283	Alkaline Aqueous	98.4	Cutting Fluid	13	0	Stainless Steel	Immersion/ Soak
W.R. Grace & Co.	Daraclean 283	Alkaline Aqueous		Cutting Fluid	154	9	Stainless Steel	Ultrasonics
Warren Chemical Co	Sea Wash 700 New	Neutral Aqueous	92.9	Cutting Fluid	153	53	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash 700 New	Neutral Aqueous	96.14	Cutting Fluid	153	53	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash 700 New	Neutral Aqueous	100.27	Cutting Fluid	153	53	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash 700 New	Neutral Aqueous	97.64	Cutting Fluid	153	53	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash 700 New	Neutral Aqueous	95.36	Cutting Fluid	153	53	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash 700 Old	Neutral Aqueous	99.36	Cutting Fluid	109	0	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous	99.97	Cutting Fluid	74	3	Aluminum	Immersion/ Soak
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous	100.07	Cutting Fluid	100	1	Stainless Steel	Immersion/ Soak
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous	100	Cutting Fluid	100	2	Stainless Steel	Immersion/ Soak
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous	100.3	Cutting Fluid	100	2	Stainless Steel	Immersion/ Soak
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous		Cutting Fluid	100	3	Stainless Steel	Ultrasonics
Warren Chemical Co	Sea Wash Neutral	Neutral Aqueous	96	Cutting Fluid	153	0	Stainless Steel	Immersion/ Soak

Summary:

Conclusion: Cleaning projects vary from case-to-case. To identify a specific cleaning agent, testing with any of the above listed products should be performed. If you would like the SSL to perform this testing, please contact the lab at (978)934-3133 to arrange delivery of parts and samples of specific contaminants.