CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1998
DateRun:	01/22/1998
Experimenters:	Carole LeBlanc, Jason Marshall
ClientType:	Manufacturing
ProjectNumber:	Project #1
Substrates:	Alloys, Brass, Nickel, Stainless Steel
PartType:	Part
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Dirt, Films, Oil
Cleaning Methods:	
Analytical Methods:	
Purpose:	List of alternatives to 1,1,1-trichloroethane.

Experimental Procedure:

QUESTION #: 1
SUBSTRATE MATERIAL: Stainless Steel, Brass, others
QUESTION ASKED: This is a request for information on alternatives to using 1,1,1-trichloroethane. Our investigation for an alternative includes a direct replacement for 1,1,1-trichloroethane, as well as aqueous and non-aqueous processes. Enclosed you will find specification information on MVR-the model of the vapor degreasers we currently use.

For our critical cleaning applications, parts are placed in a vapor degreaser using TCA. On one of our products, this process is augmented by ultrasonic scrubbing in distilled TCA.
Our standard cleaning procedure for critically cleaned components is similar to CGA standard 4.1 Cleaning procedures for oxygen service. However, we limit residue to a maximum of 10 mg per square foot of component surface. No amount of latent moisture, films, oils, or visible particulates are permitted. Additionally, our oxygen cleaning specification requires ultraviolet visual inspection for particulates - none are permitted. The metallic components we clean in TCA vary from small, easily cleaned pins, springs, etc., to more complex components (valve bodies, pistons, etc.) which have small passages. The materials we clean in TCA include austenetic (300 series) stainless steels, precipitation hardening stainless steels, free machining brass, nickel alloys (nickel, hastalloy, inconel, monel) and occasionally some cobalt alloys (eligiloy). Along with your recommendations, please include product information, material safety data sheets, equipment required, and pricing information.

Results:

RESPONSE/ANSWER: In 1998, the Massachusetts Toxics Use Reduction Institute (TURI) will publish the results of the tests conducted at the Institutes Surface Cleaning Laboratory (SCL) in a searchable database/ spreadsheet format. This should make alternative cleaner selection faster and easier. Here are the results of your query, based on the information supplied:

SCL #	Substrate	Contaminant	Mechanism	Cleaner
95-410-01-2	SS	METAL	ULTRASONICS	WR GRACE
95-410-01-2	SS	OIL	ULTRASONICS	WR GRACE
96-422-01-2	SS	CARBON	ULTRASONICS	DELTA OMEGA TECH
97-539-03-4	SS	LUBRICANT	ULTRASONICS	OAKITE
97-539-03-4	SS	LUBRICANT	ULTRASONICS	US POLYCHEM
97-539-03-4	SS	LUBRICANT	ULTRASONICS	WR GRACE
97-540-03-2	SS	BUFFING	ULTRASONICS	WR GRACE
97-540-03-2	SS	FINGERPRINTS	ULTRASONICS	WR GRACE
97-540-03-2	SS	OIL	ULTRASONICS	WR GRACE
97-547-01-2	SS	OIL	ULTRASONICS	FINE ORGANICS
97-547-01-2	SS	OIL	ULTRASONICS	WR GRACE
97-549-01-2	SS	OIL	ULTRASONICS	CHURCH & DWIGHT
97-549-01-2	SS	OIL	ULTRASONICS	GENERAL CHEMICAL
97-549-01-2	SS	OIL	ULTRASONICS	MACDERMID
97-549-01-2	SS	OIL	ULTRASONICS	OAKITE
97-549-01-2	SS	OIL	ULTRASONICS	WR GRACE
98-440-04-4	SS	BUFFING	ULTRASONICS	WR GRACE

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98-440-04-4	SS	FINGERPRINTS	ULTRASONICS	WR GRACE
98-440-04-4	SS	OIL	ULTRASONICS	WR GRACE
SCL #	Substrate	Contaminant	Mechanism	Cleaner
95-405-04-2*	BRASS	GREASE	IMMERSION	OAKITE
95-405-04-2*	BRASS	OIL	IMMERSION	OAKITE
95-407-04-2	BRASS	WAX	IMMERSION	OAKITE
95-407-07-2	BRASS	LUBRICANT	IMMERSION	AW CHESTERTON
95-407-07-2	BRASS	OIL	IMMERSION	AW CHESTERTON
95-407-07-2	BRASS	WAX	IMMERSION	AW CHESTERTON
96-414-04-2	BRASS	NONE	COMPATIBILITY	CALGON
96-414-04-2	BRASS	NONE	COMPATIBILITY	WR GRACE
96-414-06-2	BRASS	BUFFING	SPRAY	WR GRACE
96-433-01-8	BRASS	BUFFING	IMMERSION	ARDROX

Summary:

Conclusion: Cleaning projects vary from case-to-case. To obtain more detailed information about any of the listed trials, have the SCL # ready when contacting the lab at (978)934-3133.