CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 04/26/1999

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Brass, Steel

PartType: Part

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

Cleaning Methods: Immersion/Soak

Analytical Methods: Tactile, Wipe

Purpose: To further test two aqueous products on other contaminants and to evaluate other possible replacements for methylene chloride vapor degreasing.

Experimental Procedure: Prior to cleaning, one brass bolt and a section of the steel tube were analyzed to determine the level of contamination. Each part was wiped with a finger and observations were recorded.
Two products from the previous trial were used and three additional cleaners were selected based on client supplied information requiring a non-emulsifying cleaner. Each cleaner was made into 10% solutions using DI water in 1400 mL beakers and heated to 130 F on a hot plate. A portion of each cleaner was poured into a separate 400 mL beaker. The smaller beaker and solution were used to clean seven brass bolts using stir-bar-agitation for five minutes. The lager beaker was used to clean the steel tubes, also using the same agitation method and time. Both types of parts were rinsed for 30 seconds in tap water at 120 F and dried using a Master Appliance Corp, Hot-air gun model HG-301A at 500 F for one minute. After drying, observations were made to determine how clean the parts were.

SUBSTRATE MATERIAL: Brass Parts - hollow brass bolts; Steel parts - hollow steel tube
CONTAMINANTS: Oil-two different oils; Dirt - on hollow tube only

Results: All five products appeared to work well in the removal of the different contaminants. Initially the brass bolts had a slick, oily feel to them with a noticeable film on the surface. After cleaning, this oily feeling was gone and there was no apparent film on the bolt. When the steel tubes were wiped, a black, oily/dirt mark resulted. Again, after cleaning the surface no longer had any of the black, dirty mess.

Summary:

Substrates:	Brass, Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Dirt, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Calgon Corporation	Geo Guard 2215	10	0.00	☑	
US Polychem Corporation	Polyspray Jet 790 P	10	0.00	☑	
Magnaflux	Daraclean 282 GF	10	0.00	☑	
SWR Corporation	SWR One	10	0.00	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	10	0.00	☑	

Conclusion: All five cleaners were successful in removing the contaminants from both surfaces. Parts have been returned to the client for further evaluation (plating acceptability).