CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 09/16/1998

Experimenters: Jason Marshall

ClientType: Aerospace Industry

ProjectNumber: Project #1

Substrates: Alloys, Nickel

PartType: Part

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

Cleaning Methods: Ultrasonics

Analytical Methods: Black light

Purpose: Further comparison of current cleaner with two alternative products.

Experimental Procedure: Parts were immersed into a beaker containing the oil. Observations were made under black light conditions to determine a baseline level of fluorescence. The two successful chemistries from the previous trial and the client supplied cleaner were made into 15% solutions using DI water in 600 mL beakers. The beakers were placed into a 40 kHz Crest ultrasonic unit model 4Ht 1014-6 and heated to 150 F. One part was placed into each beaker and cleaned for 3 minutes without the ultrasonic unit working. Parts were inverted and cleaned for another 3 minutes using the ultrasonic energy. Each part was removed and rinsed with tap water at 120 F for 20 seconds and dried with a Master Appliance Heat Gun model HG-301A. Black light observations were made and recorded.

SUBSTRATE MATERIAL: Nickel Alloy-Inconel
CONTAMINANTS: Oil--Zyglo Penetrant ZL-27A

Results: All three chemistries removed almost all of the oil from the parts. Table 1 lists the cleaner, observations and ranking.

Table 1. Comparison of Chemistries

CHEMISTRY	OBSERVATIONS	RANKING (1 = Best, 3 = Worst)
Blue Gold	Lots of oil seeping out of holes	3
Valtech	Some oil seeping out of holes	1
SWR One	Moderate amount of oil seeping out of holes	2

The results were consistent with the previous testing except for one condition. The amount of oil remaining on the parts was higher during this trial than in the previous testing. The ratings remained the same with Valtech product cleaning the best.

Summary:

Substrates:	Alloys, Nickel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Carroll Company	Blue Gold Heavy Industrial Cleaner	15	0.00	☐	
Valtech Corporation	Valtron SP 2275	15	0.00	☑	
SWR Corporation	SWR One	15	0.00	☑	

Conclusion: Two cleaners, Valtech and SWR One, were determined to clean as well as the client's current cleaner. Next test will be conducted using the EDM fluid.