CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998

DateRun: 08/16/1998

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: To compare the current cleaner to other aqueous cleaner.

Experimental Procedure: Oil was applied using a plastic pipette. Observations were made under black light conditions to determine the level of fluorescence. The two successful chemistries from the previous trial and the client supplied cleaner were made into 5% 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 three 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--EDM Fluid
CONTAMINATING PROCESS USED: Oil was applied using a plastic pipette. Oil was made to fluoresce using Spectronics Corporation's AR-GLO® 1.

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	Some spots near the fine holes	3
Valtech	Very little oil spots	1
SWR One	Some spots near the edge holes	2

Very little of the oil remained on the Valtech cleaned part as evidenced under black light. SWR One part was almost as clean as the Valtech part.

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	5	0.00	☑	
Valtech Corporation	Valtron SP 2275	5	0.00	☑	
SWR Corporation	SWR One	5	0.00	☑	

Conclusion: Two cleaners, Valtech and SWR One, were determined to clean as well as the client's current cleaner.