CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 09/29/1999

Experimenters: Jason Marshall, Cora Roelofs

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Steel

PartType: Part

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

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual, Wipe

Purpose: To further evaluate cleaning capabilities of the three previous cleaning solutions.

Experimental Procedure: Prior to cleaning the steel tubes were analyzed to determine the level of contamination. Each part was wiped with a finger and observations were recorded.
Each cleaner was made into 10% solutions using DI water in 1400 mL beakers and heated to 120 F on a hot plate. One steel part and two stainless steel parts in each solution were cleaned in each beaker for five minutes using stir-bar-agitation. Three hollow tubes were cleaned in a 5-gallon immersion tank with and cleaned for five minutes using agitation. All 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 five minutes. After drying, wiping observations were made using a swab to determine how clean the parts were. The parts were also touched to determine if the surface still had any contamination.

SUBSTRATE MATERIAL: Steel parts
CONTAMINANTS: Oil and Dirt

Results: During the first cleaning of the stainless-steel part, it was determined that the inner hole was not being cleaned effectively when the open end was placed downward in the beaker. The position of the part was modified to evaluate cleaning in the upright and flat positions. It was found that the flat position was the most effective for removal of contaminants in the inner diameter. The results of cleaning are listed in Table 1.

Table 1. Cleaning Observations

Part	Initial Observation	US Polychem	Calgon	Oakite
Steel Part	Gritty feel	felt and looked clean	felt and looked clean	felt and looked clean
Stainless Steel Part	Slick oil feel	some dirt in inner tube	most dirt remaining of 3 cleaners	comparable to US Polychem
Hollow Tube	Lot of black dirt	mostly clean- little black dirt remaining	Not Tested	Not Tested

Summary:

Substrates:	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	☑	
Oakite Products	Inproclean 3800	10	0.00	☑	

Conclusion: Of the three cleaners evaluated, US Polychem and the Oakite products yielded comparable cleaning capabilities for two of the three parts. The hollow tubes were adequately cleaned in the US Polychem.