CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 04/28/1999

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: Smoke, Wipe

Purpose: To retest the five products from previous trial using an increased drying time. Attempt to eliminate rusting.

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 130 F on a hot plate. One steel tube was cleaned in each beaker for five minutes using stir-bar-agitation. 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. During drying, it was observed that the dirtier looking parts produced steam when heated. Each part was observed for any signs of steaming. After drying, wiping observations were made to determine how clean the parts were.

SUBSTRATE MATERIAL: Steel parts - hollow steel tube
CONTAMINANTS: Oil and Dirt

Results: Two of the cleaners appeared to remove most of the contaminants from the steel tube. One produced no steam while the other produced a little steam. The other three yielded a lot of steam while being dried. The wiping observations yielded corresponding results. The parts that had the most steam left a substantial amount of dirt when wiped. Table 1 lists the observations made for both observations made.

CLEANER	SMOKE OBSERVATION	WIPE OBSERVATION	RANKING
Calgon Geo-Guard 2215	Lots of steam	Substantial dirt	4
WR Grace Daraclean 282 GF	Some steam	Some dirt	3
US Polychem Polypray Jet 790 P	No steam	No to little dirt	1
SWR Corp SWR One	Lots of steam	Substantial dirt	5
Gemtek SC Aircraft & Metal Cleaner	Little to no steam	Little dirt	2

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	☑	
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:

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US Polychem Polyspray Jet 790 P and Gemtek SC Aircraft & Metal Cleaner were the best two cleaners. After 18 hours of sitting, there was no signs of rusting on any of the parts cleaned. The US Polychem was one of the cleaners that performed well during the first experiment with the long brass cylinders.