

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2000

DateRun: 02/15/2000

Experimenters: Jason Marshall, Cora Roelofs

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: 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 US Polychem and cleaned for five minutes using agitation. All parts were rinsed for 30 seconds in tap water at 120 F, followed by a 30 second rinse in a 10% solution of W.R. Grace Daracoat 615 rinse aid also at 120 F and dried using a Master Appliance Corp, Hot-air gun model HG-301A at 500 oF 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 and brass parts, see Figure 1.  
Figure 1. Three Part Types Cleaned  
CONTAMINANTS: Oil and Dirt

Results: The Oakite Product cleaned parts were visually cleaner than the US Polychem parts. The white swab wipe verified the visual observations. It was noted that the small tubes had rust inside them prior to cleaning. The brass part cleaned in the US Polychem appeared to be tarnished. Oakite cleaning of the brass did not have this tarnishing effect on the part.

Summary:

|                         |   |               |                    |                                     |                      |
|-------------------------|---|---------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>      | Brass, Steel  |               |                    |                                     |                      |
| <b>Contaminants:</b>    | Cutting/Tapping Fluids, Lubricating/Lapping Oils, Dirt, Oil |               |                    |                                     |                      |
| <b>Company Name:</b>    | <b>Product Name:</b>  | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| US Polychem Corporation | Polyspray Jet 790 P   | 10            |                    | <input type="checkbox"/>            |                      |
| Oakite Products         | Inproclean 3800   | 10            |                    | <input checked="" type="checkbox"/> |                      |

Conclusion: Of the two cleaners evaluated, the Oakite product yielded cleaner parts than those cleaned in the US Polychem solution.