

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998
 DateRun: 06/10/1998
 Experimenters: Jason Marshall
 ClientType: Tool Manufacturer
 ProjectNumber: Project #1
 Substrates: Steel
 PartType: Part
 Contaminants: Buffing/Polishing Compounds, Greases, Dirt, Metal fines
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Visual
 Purpose: Compare current cleaner w/ other aqueous cleaners

Experimental Procedure: Six aqueous cleaners were selected using two laboratory databases. The chemistries were selected based on vendor information as well as past laboratory use. Five percent solutions were made into 600 mL beakers. These cleaners, as well as the client's current cleaner, were heated to 150 F on a hot plate. Two parts were cleaned in each solution for 5 minutes. The parts were rinsed in tap water at 120 F for 30 seconds. Observations of effectiveness were recorded throughout the experiment.

SUBSTRATE MATERIAL: Steel ratchet handles
 CONTAMINANTS: Grease, buffing compound, dirt & metal fines.

Results: Three of the cleaners worked as well as the current chemistry. All of the parts, including parts cleaned in current chemistry, started to form rust after several minutes. Table 1 compares the cleaning effectiveness of the six chemistries. A ranking of 1 would be equal to the current cleaner.

Table 1 Chemistries Ranking

| CHEMISTRY | CLEANING | RUSTING |
|-----------------|----------|---------|
| US Polychem | 4 | 3 |
| EMKAY | 2 | 2 |
| Chrisal USA | 6 | 4 |
| Matchless | 1 | 1 |
| Oakite Products | 5 | 5 |
| Calgon Corp | 3 | 6 |

Both the cleaning and rusting ranking were based on comparing the selected cleaner to the client's current cleaning chemistry. Two products, Matchless and EMKAY, both cleaned about the same and had similar amounts of rusting.

Summary:

| Substrates: | Steel | | | | | |
|--------------------------------|---|--------|-------------|-------------------------------------|---------------|--|
| Contaminants: | Buffing/Polishing Compounds, Greases, Dirt, Metal fines | | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: | |
| US Polychem Corporation | Polyspray Jet 790 XS | 5 | | <input type="checkbox"/> | | |
| Oakite Products | Inproclean 3800 | 5 | | <input type="checkbox"/> | | |
| Matchless Metal Polish Company | MC 132 | 5 | | <input checked="" type="checkbox"/> | | |
| Emkay Chemical Company | Safety Wash | 5 | | <input checked="" type="checkbox"/> | | |
| Chrisal USA Inc | Super CMF 240 | 5 | | <input type="checkbox"/> | | |
| Calgon Corporation | Geo Guard 2215 | 5 | | <input type="checkbox"/> | | |
| Hubbard Hall Inc | Aquaease PL 110 | 5 | | <input type="checkbox"/> | | |

Conclusion: After cleaning the parts, two cleaners appear to have similar cleaning capacities as the current cleaner. Each had slightly more rusting develop. MSDSs and technical data sheets of each chemistry has been included with the report. Information on filtration is currently being gathered by the Surface Cleaning Laboratory staff. This information will be sent within a week or two.