

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001
DateRun: 08/14/2001
Experimenters: Jason Marshall
ClientType: General
ProjectNumber: Project #1
Substrates: Brass
PartType: Part
Contaminants: Paints
Cleaning Methods: Immersion/Soak
Analytical Methods: Visual

Purpose: To identify potential cleaning formulations for cleaning brass parts

Experimental Procedure: Nine cleaning formulations were selected based on past trials and vendor information according to the client supplied data. Three solutions were used at 100% and the remaining six were diluted to 10% using DI water in 250 ml beakers. Solutions were heated to 130 F in a Branson 3150 40 kHz ultrasonic tank filled with water. One part was submersed into the heated solution and cleaned for 10 minutes. Parts were observed after the first 5 minutes and at the end of cleaning. Upon completion of cleaning, parts were rinsed with tap water at 120 F and dried using a heat gun at 500 F. Observations were recorded and products were evaluated for effectiveness.

Results: Most of the products tested showed some signs of removing the paint from the brass parts. A couple of the products brightened the exposed metal. The following table lists the observations made at the 5 and 10 minute cleaning intervals, followed by a table of the ranking for each product (1 = best).

| Cleaner | 5 min | 10 min | Ranking |
|----------------------|--|---|---------|
| Soy Gold 2000 | dirt removed- paint stil there | paint softened | 9 |
| Compliance | dirt removed- paint softened | paint coming off, brightening of metal | 6 |
| Shopmaster RC | paint dissolving | dissolving and peeling | 2 |
| Bio T Max | paint dissolving- peeling | exposed brass brighter | 4 |
| SC Supersolve | paint lifting- peeling | more peeling, some brightening of metal | 3 |
| Inproclean 3800 | lifting- dissolving | some brightening, more peeling | 7 |
| Inproclean 4000 T | dissolving- peeling | good brightening, most of paint peeled off | 1 |
| Beyond 2003 | some dissolving/ lifting | peeling | 8 |
| Polyspray Jet 790 XS | lifting- dissolving- brightening | peeling, good brightening | 5 |
| Inproclean 4000 T | | | |
| Shopmaster RC | | | |

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|----------------------|--|--|--|
| SC Supersolve | | | |
| Bio T Max | | | |
| Polyspray Jet 790 XS | | | |
| Compliance | | | |

After cleaning was completed, it was noted that the parts selected for cleaning were not identical in the amount of paint and size of the part. Additional test will be performed for the top six product with more closely matched parts. View pictures of dirty and clean samples.

Summary:

| Substrates: | Brass | | | | |
|---------------------------|------------------------------|--------|-------------|-------------------------------------|---------------|
| Contaminants: | Paints | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| AG Environmental Products | Soy Gold 2000 | 100 | 9.00 | <input type="checkbox"/> | Rank |
| Brulin Corporation | Compliance | 5 | 6.00 | <input type="checkbox"/> | Rank |
| Buckeye International | Shopmaster RC | 100 | 2.00 | <input checked="" type="checkbox"/> | Rank |
| Bio Chem Systems | Bio T Max | 100 | 4.00 | <input checked="" type="checkbox"/> | Rank |
| Gemtek Products | SC Supersolve Safety Solvent | 100 | 3.00 | <input checked="" type="checkbox"/> | Rank |
| Oakite Products | Inproclean 3800 | 5 | 7.00 | <input type="checkbox"/> | Rank |
| Oakite Products | Inproclean 4000 T | 100 | 1.00 | <input type="checkbox"/> | Rank |
| Today & Beyond | Beyond 2003 | 5 | 8.00 | <input checked="" type="checkbox"/> | Rank |
| US Polychem Corporation | Polyspray Jet 790 XS | 5 | 5.00 | <input checked="" type="checkbox"/> | Rank |

Conclusion:

The top six products, Inproclean 4000 T, Shopmaster RC, SC Supersolve, Bio T Max, Polyspray Jet 790 XS and Compliance will be reevaluated under the similar conditions using more equal parts.