

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004
 DateRun: 08/18/2004
 Experimenters: Jason Marshall
 ClientType: Jewelry Mfr
 ProjectNumber: Project #1
 Substrates: Brass
 PartType: Coupon
 Contaminants: Buffing/Polishing Compounds
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric

Purpose: To evaluate selected aqueous based cleaning products for buffing compound removal.

Experimental Procedure: Eight alternative aqueous products were selected from the laboratory's database of test results based on client specific information. Each product was diluted to 5% using DI water in 600 ml beakers and heated to 130F on a hot plate. Twenty-four preweighed CDA260 Brass coupons were coated with the Matchless Metal Polishing Company K55-278 Liquid Tripoli Buffing compound (1317-85-8) using a hand held swab. Coupons were allowed to sit overnight and weighed a second time to determine the amount of soil added to each coupon. Three coupons were cleaned in each product for 5 minutes using stir-bar agitation. Coupons were rinsed for 15 seconds in tap water at 120F and dried for 30 seconds using air blow off at room temperature. Once coupons were dry, final weights were recorded and efficiencies were calculated.

Results: Some of the products started to show signs of removing the buffing compound after the five minutes of immersion cleaning. However none of the products removed over 75% contaminant. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|---------------------|------------|----------|-----------|
| KPC 820 N | 0.4778 | 0.4298 | 10.05 |
| | 0.4582 | 0.3664 | 20.03 |
| | 0.7620 | 0.6614 | 13.20 |
| Aquavantage 1400 GD | 0.4840 | 0.3099 | 35.97 |
| | 0.3186 | 0.1450 | 54.49 |
| | 0.3690 | 0.2081 | 43.60 |
| Shopmaster LpH | 0.3856 | 0.2743 | 28.86 |
| | 0.3254 | 0.2431 | 25.29 |
| | 0.2767 | 0.2240 | 19.05 |
| SC Aircraft & Metal | 0.3526 | 0.3246 | 7.94 |
| | 0.2869 | 0.2077 | 27.61 |
| | 0.2231 | 0.1549 | 30.57 |
| Micro 90 | 0.4195 | 0.3228 | 23.05 |
| | 0.3150 | 0.2187 | 30.57 |
| | 0.4062 | 0.3236 | 20.33 |
| Inproclean 3800 | 0.3655 | 0.1044 | 71.44 |
| | 0.5178 | 0.1798 | 65.28 |
| | 0.3585 | 0.1534 | 57.21 |
| Beyond 2003 | 0.4341 | 0.1292 | 70.24 |
| | 0.4077 | 0.2301 | 43.56 |
| | 0.3751 | 0.2036 | 45.72 |
| Polyspray Jet 790 P | 0.3851 | 0.2631 | 31.68 |
| | 0.4166 | 0.2360 | 43.35 |
| | 0.3900 | 0.2014 | 48.36 |

Summary:

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|----------------------|-----------------------------|---------------|--------------------|-------------------|----------------------|
| Substrates: | Brass | | | | |
| Contaminants: | Buffing/Polishing Compounds | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |

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|---------------------------------------|--|---|-------|-------------------------------------|--|
| AW Chesterton | KPC 820 N | 5 | 14.43 | <input type="checkbox"/> | |
| Brulin Corporation | Aquavantage 1400 | 5 | 44.69 | <input checked="" type="checkbox"/> | |
| Buckeye International | Shopmaster LPH | 5 | 24.40 | <input type="checkbox"/> | |
| Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 5 | 22.04 | <input type="checkbox"/> | |
| International Products Corporation | Micro 90 Conc. | 5 | 24.65 | <input type="checkbox"/> | |
| Oakite Products | Inproclean 3800 | 5 | 64.64 | <input checked="" type="checkbox"/> | |
| Today & Beyond | Beyond 2003 | 5 | 53.17 | <input checked="" type="checkbox"/> | |
| US Polychem Corporation | Polyspray Jet 790 P | 5 | 41.13 | <input checked="" type="checkbox"/> | |

Conclusion: The four products with efficiencies over 40% will be evaluated next using ultrasonic energy.