

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006
DateRun: 08/16/2006
Experimenters: Jason Marshall
ClientType: Metal Working
ProjectNumber: Project #1
Substrates: Brass
PartType: Coupon
Contaminants: Buffing/Polishing Compounds
Cleaning Methods: Immersion/Soak
Analytical Methods: Gravimetric
Purpose: To evaluate selected products for buffing compound removal.

Experimental Procedure: Eight alternative products were selected from the lab's database of testing results based on supplied client information. Products were selected based on buffing compound and oil removal potential and compatibility with brass metal substrates. Each product was diluted to 5% in 250 ml beakers using DI water and heated to 130 F on a hot plate.

Twenty-four preweighed coupons were coated with the green buffing compound using a handheld swab after heating to its melting point with a heat gun. Coupons were weighed a second time to determine the amount of buffing compound added. Three coupons were cleaned in each solution for five minutes using minimal stir bar agitation. Coupons were rinsed for 15 seconds in a tap water bath at 120 F and dried using a dry compressed air for 30 seconds. Once dry coupons were weighed a final time and product efficiencies were calculated.

Results: Only one of the products, Polyspray Jet 790 XS, removed over 85% using immersion cleaning. A second product, Inproclean 3800, removed just over 60%. The following table lists the amount of buffing compound applied, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|----------------------|------------|----------|-----------|
| KPC 820 N | 0.3450 | 0.2243 | 34.99 |
| | 0.5303 | 0.3470 | 34.57 |
| | 0.7658 | 0.5817 | 24.04 |
| 1990 GD | 0.7036 | 0.5119 | 27.25 |
| | 0.2148 | 0.1132 | 47.30 |
| | 0.8864 | 0.6942 | 21.68 |
| SC Aircraft & Metal | 0.6186 | 0.4965 | 19.74 |
| | 0.5409 | 0.5220 | 3.49 |
| | 0.4449 | 0.4332 | 2.63 |
| Micro 90 | 0.2197 | 0.1408 | 35.91 |
| | 0.5064 | 0.3748 | 25.99 |
| | 0.9407 | 0.8823 | 6.21 |
| Daraclean 283 | 0.2063 | 0.1094 | 46.97 |
| | 0.4799 | 0.2701 | 43.72 |
| | 0.2921 | 0.0817 | 72.03 |
| Inproclean 3800 | 0.4517 | 0.1812 | 59.88 |
| | 0.3630 | 0.1230 | 66.12 |
| | 0.2662 | 0.1115 | 58.11 |
| Beyond 2001 | 0.6450 | 0.3844 | 40.40 |
| | 0.3123 | 0.1155 | 63.02 |
| | 0.3038 | 0.0962 | 68.33 |
| Polyspray Jet 790 XS | 0.2699 | 0.0407 | 84.92 |
| | 0.6787 | 0.1967 | 71.02 |
| | 0.1059 | 0.0010 | 99.06 |

Summary:

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|----------------------|-----------------------------|
| Substrates: | Brass |
| Contaminants: | Buffing/Polishing Compounds |

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| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
|---------------------------------------|--|--------|-------------|-------------------------------------|---------------|
| AW Chesterton | KPC 820 N | 5 | 31.20 | <input type="checkbox"/> | |
| Brulin Corporation | Brulin 1990 GD | 5 | 32.08 | <input type="checkbox"/> | |
| Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 5 | 8.62 | <input type="checkbox"/> | |
| International Products Corporation | Micro 90 Conc. | 5 | 22.70 | <input type="checkbox"/> | |
| Magnaflux | Daraclean 283 | 5 | 54.24 | <input type="checkbox"/> | |
| Oakite Products | Inproclean 3800 | 5 | 61.37 | <input type="checkbox"/> | |
| Today & Beyond | Beyond 2001 | 5 | 57.25 | <input type="checkbox"/> | |
| US Polychem Corporation | Polyspray Jet 790 XS | 5 | 85.00 | <input checked="" type="checkbox"/> | |

Conclusion:

The one effective product, Polyspray 790 XS and the next three most effective products will be tested on the same buffing compound using ultrasonic energy.