

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006  
 DateRun: 09/05/2006  
 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 cleaners on supplied buffing compound using immersion cleaning.

Experimental Procedure: Seven products were selected from the lab's database of testing results based on supplied client information. Products were selected based on buffing compound 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-one preweighed coupons were coated with the yellow buffing compound. The compound was heated to melting so that a handheld swab could spread the compound across the coupons. 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: All seven products removed over 70% of the buffing compound after 5 minutes of immersion cleaning. Three removed over 85%. 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 |
|----------------------|------------|----------|-----------|
| XL 100               | 0.1332     | 0.0230   | 82.73     |
|                      | 0.0988     | 0.0190   | 80.77     |
|                      | 0.1205     | 0.0474   | 60.66     |
| MC 132               | 0.1797     | 0.0325   | 81.91     |
|                      | 0.1247     | 0.0165   | 86.77     |
|                      | 0.0710     | 0.0016   | 97.75     |
| Inproclean 3800      | 0.1177     | 0.0228   | 80.63     |
|                      | 0.1203     | 0.0309   | 74.31     |
|                      | 0.1406     | 0.0221   | 84.28     |
| Polyspray Jet 790 XS | 0.2332     | 0.0379   | 83.75     |
|                      | 0.1756     | 0.0187   | 89.35     |
|                      | 0.1102     | 0.0017   | 98.46     |
| Daraclean 283        | 0.1327     | 0.0274   | 79.35     |
|                      | 0.2145     | 0.0349   | 83.73     |
|                      | 0.2708     | 0.0821   | 69.68     |
| Detergent 8          | 0.1725     | 0.0018   | 98.96     |
|                      | 0.0934     | 0.0026   | 97.22     |
|                      | 0.0569     | 0.0011   | 98.07     |
| Gillite 0650 CI      | 0.1881     | 0.0299   | 84.10     |
|                      | 0.3137     | 0.0980   | 68.76     |
|                      | 0.3381     | 0.0840   | 75.16     |

Summary:

|                       |                             |               |                    |                                     |                      |
|-----------------------|-----------------------------|---------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>    | Brass                       |               |                    |                                     |                      |
| <b>Contaminants:</b>  | Buffing/Polishing Compounds |               |                    |                                     |                      |
| <b>Company Name:</b>  | <b>Product Name:</b>        | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| Buckeye International | XL 100 Cleaner & Degreaser  | 5             | 74.72              | <input type="checkbox"/>            |                      |
|                       | MC 132                      | 5             | 88.81              | <input checked="" type="checkbox"/> |                      |

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|                                |                      |   |       |                                     |  |
|--------------------------------|----------------------|---|-------|-------------------------------------|--|
| Matchless Metal Polish Company |                      |   |       |                                     |  |
| Oakite Products                | Inproclean 3800      | 5 | 79.74 | <input type="checkbox"/>            |  |
| US Polychem Corporation        | Polyspray Jet 790 XS | 5 | 90.52 | <input checked="" type="checkbox"/> |  |
| Magnaflux                      | Daraclean 283        | 5 | 77.59 | <input type="checkbox"/>            |  |
| Alconox Inc                    | Detergent 8          | 5 | 98.08 | <input checked="" type="checkbox"/> |  |
| Man Gill Chemical Company      | Gillite 0650 CI      | 5 | 76.01 | <input type="checkbox"/>            |  |

**Conclusion:**

Three products were found to work on the supplied buffing compound. Cleaning with ultrasonic energy will increase the effectiveness of the products especially when dealing with intricate parts. With the products successful on the buffing compound, the next step will be to evaluate these cleaners on supplied parts at or after workshop.