

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008
 DateRun: 05/19/2008
 Experimenters: Jason Marshall, Shweta Bansal
 ClientType: Machining Company
 ProjectNumber: Project #1
 Substrates: Aluminum
 PartType: Coupon
 Contaminants: Cutting/Tapping Fluids
 Cleaning Methods: Mechanical Agitation
 Analytical Methods: Gravimetric

Purpose: To evaluate additional products for second supplied soil.

Experimental Procedure: Preweighed coupons were coated with the supplied cutting fluid (WA wood, 57 F Cutting oil) using a handheld swab and weighed a second time to determine the amount of soil added.
 The top three product from the previous trial were poured into a bowl and three coupons were dunked into the solution at a constant rate for 30 seconds of cleaning. The coupons were then put on a tray and when done and allowed to air dry. There was no rinse. The process was done to as closely replicate the process used on site as possible. Once dry, final weights were recorded, and efficiency calculated for each coupon cleaned.

Results: The three products had limited success in 30 seconds of manual cleaning at 10% dilutions. No product removed more than 50% of the cutting fluid. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|------------------|------------|----------|-----------|
| Inproclean 3800 | 0.3433 | 0.2335 | 31.98 |
| | 0.4341 | 0.1973 | 54.55 |
| | 0.2236 | 0.1962 | 12.25 |
| SC Aircraft | 0.2390 | 0.2337 | 2.22 |
| | 0.2773 | 0.2159 | 22.14 |
| | 0.3501 | 0.2764 | 21.05 |
| Aquavantage 1400 | 0.5817 | 0.2683 | 53.88 |
| | 0.2313 | 0.1311 | 43.32 |
| | 0.3011 | 0.2066 | 31.38 |

Summary:

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|----------------------|-----------------------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Aluminum | | | | |
| Contaminants: | Cutting/Tapping Fluids | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Oakite Products | Inproclean 3800 | 10 | 32.93 | <input type="checkbox"/> | |
| Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 10 | 15.15 | <input type="checkbox"/> | |
| Bruhin Corporation | Aquavantage 1400 | 10 | 42.86 | <input checked="" type="checkbox"/> | |

Conclusion: Products concentrations will be increased, and additional products will be added to the testing for the final supplied contaminant - rust preventative. Follow up testing will be performed on the cutting fluid using higher concentrations.