

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008
 DateRun: 12/02/2008
 Experimenters: Johanna Oviedo
 ClientType: Lab
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Cutting/Tapping Fluids
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric

Purpose: To remove taping fluid from stainless steel using immersion cleaning

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Products were selected based on the compatibility of substrate and for removal of the contaminant. Five percent concentrations were used and heated the samples at 130F. The coupons were immersed in a product for 5 minutes, rinsed in tap water at 120 F and dried using compressed air at room temperature. Coupons were coated with used tapping fluid using a handheld swab and allowed to dry for 120 minutes at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. After cleaning process, the final weights were recorded, efficiencies were calculated and recorded.

Results:

| Cleaner | Initial wt | Final wt | % Removed |
|------------------------------|------------|----------|-----------|
| Chem Free Corp. SW 6 Metals | | | |
| | 0.1487 | 0.0368 | 75.25 |
| | 0.1693 | 0.0261 | 84.58 |
| | 0.3071 | 0.0218 | 92.90 |
| Kyzen Corp, Metlanox M6410DT | | | |
| | 0.2062 | 0.0309 | 85.01 |
| | 0.2507 | 0.0447 | 82.17 |
| | 0.1986 | 0.0581 | 70.75 |
| Kyzen Corp, Metlanox M6432 | | | |
| | 0.2392 | 0.0694 | 70.99 |
| | 0.1099 | 0.0214 | 80.53 |
| | 0.1124 | 0.0223 | 80.16 |
| Magnaflux, Daraclean 203 | | | |
| | 0.1073 | 0.0346 | 67.75 |
| | 0.1435 | 0.0207 | 85.57 |
| | 0.0797 | 0.0320 | 59.85 |
| Magnaflux, Daraclean 257 | | | |
| | 0.1548 | -0.0104 | 106.72 |
| | 0.2523 | 0.0262 | 89.62 |
| | 0.2121 | 0.0296 | 86.04 |

Summary:

| | | | | | |
|-----------------------|---|---------------|--------------------|--------------------------|----------------------|
| Substrates: | Stainless Steel | | | | |
| Contaminants: | Cutting/Tapping Fluids | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Chem Free Corporation | SW-6 Ozzy Juice Select Metals Degreasing Solution | 5 | 84.25 | <input type="checkbox"/> | |
| Kyzen Corporation | Metalnox M6410DT | 5 | 79.31 | <input type="checkbox"/> | |
| Magnaflux | Daraclean 203 | 5 | 77.22 | <input type="checkbox"/> | |

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|-------------------|--------------------------------------|---|-------|-------------------------------------|--|
| Magnaflux | Daraclean 257 | 5 | 71.06 | <input type="checkbox"/> | |
| Kyzen Corporation | Metalnox M6432 (For Comparison Only) | 5 | 94.13 | <input checked="" type="checkbox"/> | |

Conclusion: Only one product removed over 85% of the tapping fluid. A second product removed just less than 85%.