

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009

DateRun: 02/25/2009

Experimenters: Daniel Pina

ClientType: Lab

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Cutting/Tapping Fluids

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: Using non-toxic aqueous cleaning products to remove cutting/tapping fluid off of steel using a manuel wipe method.

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Weigh the steel coupons to get an original weight before adding the cutting/tapping fluid. The weigh the dirty coupons get a second reading. Setup the manual wipe machine for 20 cycles = 30 seconds and add the cleaning solution to the coupons that is designated to be tested with this cleaning product. After that reweigh the coupons to get a final reading and see what percentage of the tapping/cutting fluid has been taken off.

Results:

| Cleaner | Initial wt | Final wt | % Removed |
|--|------------|----------|-----------|
| Brulin Corp. - Aquavantage | | | |
| | 0.0500 | -0.0010 | 102.00 |
| | 0.1000 | -0.0063 | 106.30 |
| | 0.0760 | -0.0070 | 109.21 |
| Ecolink Pinnacle | | | |
| | 0.1760 | -0.0012 | 100.68 |
| | 0.1569 | -0.0069 | 104.40 |
| | 0.1607 | -0.0016 | 101.00 |
| Innovative Organics inc - Amber Clean | | | |
| | 0.1387 | -0.0014 | 101.01 |
| | 0.1016 | -0.0019 | 101.87 |
| | 0.2642 | -0.0085 | 103.22 |
| Magnaflux - Daraclean 238 | | | |
| | 0.0972 | -0.0072 | 107.41 |
| | 0.1094 | -0.0061 | 105.58 |
| | 0.1389 | -0.0057 | 104.10 |
| Magnaflux - Daraclean 236 | | | |
| | 0.2343 | -0.0062 | 102.65 |
| | 0.2924 | -0.0021 | 100.72 |
| | 0.1436 | -0.0021 | 101.46 |
| US PolyChem Corp. - Polyspray jet 790 xs | | | |
| | 0.1713 | -0.0052 | 103.04 |
| | 0.1834 | -0.0067 | 103.65 |
| | 0.2302 | -0.0070 | 103.04 |
| Warren Chemical company - Sea Wash Blue | | | |
| | 0.1591 | -0.0027 | 101.70 |
| | 0.1930 | 0.0031 | 98.39 |
| | 0.2074 | -0.0119 | 105.74 |

Summary:

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| Substrates: | | Steel | | | |
|-------------------------|----------------------|------------------------|--------------------|-------------------------------------|---|
| Contaminants: | | Cutting/Tapping Fluids | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Brulin Corporation | Aquavantage 1400 | 10 | 105.84 | <input type="checkbox"/> | above 103 possible need to over look product to see if product does indeed coroded the sample or if it has taken off the soil that was on the sample originally before being soiled by the cutting/tapping fluid. |
| EcoLink | Pinnacle | 10 | 102.03 | <input checked="" type="checkbox"/> | |
| Innovative Organics Inc | Amberclean SC 11 | 10 | 102.03 | <input checked="" type="checkbox"/> | |
| Magnaflux | Daraclean 238 | 10 | 105.70 | <input checked="" type="checkbox"/> | above 103 possible need to over look product to see if product does indeed coroded the sample or if it has taken off the soil that was on the sample originally before being soiled by the cutting/tapping fluid. |
| Magnaflux | Daraclean 236 | 10 | 101.61 | <input checked="" type="checkbox"/> | |
| US Polychem Corporation | Polyspray Jet 790 XS | 10 | 103.24 | <input checked="" type="checkbox"/> | |
| Warren Chemical Company | Sea Wash Blue | 10 | 101.94 | <input checked="" type="checkbox"/> | |

Conclusion:

All of the product passed the test with average cleaning average of 100+%. They are two products that need to have a second look to see if the product does damage to the product or not. They are Aquavantage 1400 and Daraclean 238.