

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008
 DateRun: 07/29/2008
 Experimenters: Shweta Bansal
 ClientType: Lab
 ProjectNumber: Project #1
 Substrates: Aluminum
 PartType: Coupon
 Contaminants: Cutting/Tapping Fluids
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric

Purpose: To remove vanishing cutting fluid from aluminum 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 with tap water and dried using room temperature compressed air. Coupons were coated with vanishing cutting fluid using a handheld swab and allowed to dry for one hour 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 |
|-----------------------------|------------|----------|-----------|
| Daraclean 235 | | | |
| | 0.2522 | 0.1096 | 56.54 |
| | 0.2164 | 0.1429 | 33.96 |
| | 0.2988 | 0.1172 | 60.78 |
| SC Supersolv | | | |
| | 0.3029 | 0.0522 | 82.77 |
| | 0.3728 | 0.0578 | 84.50 |
| | 0.4659 | 0.0578 | 87.59 |
| Bio T Max | | | |
| | 0.4027 | 0.0682 | 83.06 |
| | 0.4454 | 0.0521 | 88.30 |
| | 0.4020 | 0.0543 | 86.49 |
| Sea Wash Blue | | | |
| | 0.3693 | 0.1035 | 71.97 |
| | 0.4483 | 0.1038 | 76.85 |
| | 0.3500 | 0.1499 | 57.17 |
| Valtron SP 2275 | | | |
| | 0.6383 | 0.1025 | 83.94 |
| | 0.5283 | 0.0970 | 81.64 |
| | 0.9955 | 0.1000 | 89.95 |
| SC Aircraft & Metal Cleaner | | | |
| | 0.8885 | 0.1547 | 82.59 |
| | 0.6062 | 0.1489 | 75.44 |
| | 0.7274 | 0.1341 | 81.56 |

Summary:

| | | | | | |
|----------------------|------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Aluminum | | | | |
| Contaminants: | Cutting/Tapping Fluids | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Magnaflux | Daraclean 235 | 5 | 50.43 | <input type="checkbox"/> | |
| Gemtek Products | SC Supersolve Safety Solvent | 5 | 84.11 | <input type="checkbox"/> | |
| Bio Chem Systems | Bio T Max | 5 | 85.95 | <input checked="" type="checkbox"/> | |

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|-------------------------|-----------------------------------------------|---|-------|-------------------------------------|--|
| Warren Chemical Company | Sea Wash Blue | 5 | 88.74 | <input checked="" type="checkbox"/> | |
| Valtech Corporation | Valtron SP 2275 | 5 | 85.18 | <input checked="" type="checkbox"/> | |
| Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 5 | 79.86 | <input type="checkbox"/> | |

Conclusion: Three of the six products removed over 85% of the cutting fluid using heated immersion cleaning.