

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 01/08/2008

Experimenters: Jason Marshall

ClientType: Chemical Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate final product on four previously submitted soils as a follow up to other products tested.

Experimental Procedure: The supplied product was diluted to the five percent and heated to 135 F on a hot plate. Twelve preweighed Aluminum 6061 T6 coupons were coated with the four contaminants, three per contaminant using a handheld swab. Coupons were weighed a second time to determine the amount of cutting fluid added.

Three coupons were immersed in each solution and cleaned for five minutes using minimal stir-bar agitation. Coupons were rinsed in tap water heated to 135 F. All coupons were dried for 10 minutes in an oven at 140 F. After drying, coupons were weighed a third time and product cleaning efficiencies were calculated.

Contaminants Include:
Cinster cutting fluid
Clean Tool II lubricant
Blaser Vascomil 22 cutting fluid
Haycut SW 220 cutting fluid

Results: The supplied cleaning product was successful on all four contaminants using immersion cleaning, removing over 90% of the cutting fluids/oils within five minutes. The table below lists the amount of soil added, the amount remaining and the efficiency of the product for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|-------------------|------------|----------|-----------|
| Cinster | 0.1387 | 0.0020 | 98.56 |
| | 0.2366 | 0.0019 | 99.20 |
| | 0.1449 | 0.0030 | 97.93 |
| Cleen Tool II | 0.1185 | 0.0017 | 98.57 |
| | 0.1525 | 0.0013 | 99.15 |
| | 0.2376 | 0.0016 | 99.33 |
| Blaser Vacomil 22 | 0.1611 | 0.0269 | 83.30 |
| | 0.2134 | 0.0044 | 97.94 |
| | 0.2634 | 0.0045 | 98.29 |
| Haycut SW 220 | 0.3550 | 0.0162 | 95.44 |
| | 0.4734 | 0.0215 | 95.46 |
| | 0.7641 | 0.0238 | 96.89 |

Summary:

| Substrates: | Aluminum | | | | |
|----------------------|---|--------|-------------|-------------------------------------|------------------------------------|
| Contaminants: | Cutting/Tapping Fluids, Oil | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Simple Green | Extreme Simple Green Aircraft & Precision Cleaner | 5 | 98.56 | <input checked="" type="checkbox"/> | Cinster cutting fluid |
| Simple Green | Extreme Simple Green Aircraft & Precision Cleaner | 5 | 99.01 | <input checked="" type="checkbox"/> | Clean Tool II - lubricant |
| Simple Green | Extreme Simple Green Aircraft & Precision Cleaner | 5 | 93.18 | <input checked="" type="checkbox"/> | Blaser Vacomil 122 - cutting fluid |
| Simple Green | Extreme Simple Green Aircraft & Precision Cleaner | 5 | 95.93 | <input checked="" type="checkbox"/> | Haycut SW220 - cutting fluid |

Conclusion:

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When compared to the other products tested previously on the same four soils, the Simple Green product was as effective as the others.