

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 05/17/2007

Experimenters: Jason Marshall, Shweta Bansal

ClientType: Metal

ProjectNumber: Project #1

Substrates: Alloys

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate effective alternatives on the sixth supplied contaminant.

Experimental Procedure: Five products from the previous trial were selected and used at full strength based on past performances. The cleaning solutions were all heated to 130 F on a hot plate.

Fifteen preweighed alloy coupons were coated with the sixth contaminant and weighed a second time to determine the amount of contaminant added to each coupon. Three coupons were immersed into each solution and cleaned for 5 minutes using stir-bar agitation. Coupons were rinsed in room temperature tap water for 15 seconds and air dried using compressed dry air for 30 seconds. A final weight was recorded, and efficiencies were calculated for each coupon cleaned.

Results: All five products removed over 92% of the lubricant. Three removed over 95% and one of these (DS 108) removed over 97%. The table below lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|-----------------|------------|----------|-----------|
| Soy Gold 1100 | 0.6604 | 0.0227 | 96.56 |
| | 0.7529 | 0.0258 | 96.57 |
| | 0.4799 | 0.0346 | 92.79 |
| Solsafe 245 | 0.4885 | 0.0197 | 95.97 |
| | 0.5469 | 0.0269 | 95.08 |
| | 0.5791 | 0.0279 | 95.18 |
| Shopmaster RC | 0.4321 | 0.0467 | 89.19 |
| | 1.4430 | 0.0325 | 97.75 |
| | 0.4722 | 0.0505 | 89.31 |
| DS 108 | 0.4749 | 0.0130 | 97.26 |
| | 0.4202 | 0.0135 | 96.79 |
| | 0.6765 | 0.0140 | 97.93 |
| D Greeze 500 LO | 0.3274 | 0.0223 | 93.19 |
| | 0.4527 | 0.0240 | 94.70 |
| | 0.4694 | 0.0234 | 95.01 |

Summary:

| Substrates: | Alloys | | | | |
|---------------------------|--------------------------|--------|-------------|-------------------------------------|---------------|
| Contaminants: | Lubricating/Lapping Oils | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| AG Environmental Products | Soy Gold 1100 | 100 | 95.31 | <input checked="" type="checkbox"/> | |
| Bio Chem Systems | Solsafe 245 | 100 | 95.41 | <input checked="" type="checkbox"/> | |
| Buckeye International | Shopmaster RC | 100 | 92.08 | <input checked="" type="checkbox"/> | |
| Dysol | DS 108 Wipe Solvent | 100 | 97.33 | <input checked="" type="checkbox"/> | |
| Transene Company, Inc. | D Greeze 500 LO | 100 | 94.30 | <input checked="" type="checkbox"/> | |

Conclusion: The five products should be retested on the fourth and fifth contaminants with modified operating conditions to improve cleaning efficiency.