

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005
 DateRun: 11/10/2005
 Experimenters: Jason Marshall
 ClientType: Lab
 ProjectNumber: Project #1
 Substrates: Aluminum
 PartType: Coupon
 Contaminants: Lubricating/Lapping Oils
 Cleaning Methods: Low Pressure Spray
 Analytical Methods: Gravimetric
 Purpose: Laboratory evaluations of alternative cleaning products

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Six preweighed aluminum coupons were coated with Keystone Nevastane 6 Food Machinery Lubricating Oil (64742-47-8, 8042-47-5, 9003-29-6) by spray application and wiping with a handheld swab. Coupons were reweighed to determine the amount of soil added. Two aqueous products were diluted to 5% using DI water and were placed in a 500 ml glass bottle. An adapter designed to convert the liquid solution into a spray aerosol was used in conjunction with Crown Spra-Tool (propane and isobutane) as the propellant. Each aqueous product was used for about 1 minute at room temperature. After cleaning coupons were allowed to air dry for 30 minutes at room temperature. At the end of drying, final weights were recorded, and removal efficiencies were calculated for each coupon cleaned.

Results: The Brulin Corp product removed over 75% of the lubricant using the aerosol application technique. The other product removed less than 30%. The table lists the amount of soil added, the amount remaining and the efficiency.

| Cleaner | Initial wt | Final wt | % Removed |
|-----------|------------|----------|-----------|
| KPC 820 N | 0.1403 | 0.1143 | 18.53 |
| | 0.1791 | 0.1165 | 34.95 |
| | 0.1495 | 0.1033 | 30.90 |
| 815 GD | 0.3361 | 0.0606 | 81.97 |
| | 0.2877 | 0.0703 | 75.56 |
| | 0.2703 | 0.0711 | 73.70 |

Summary:

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|----------------------|--------------------------|---------------|--------------------|--------------------------|----------------------|
| Substrates: | Aluminum | | | | |
| Contaminants: | Lubricating/Lapping Oils | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| AW Chesterton | KPC 820 N | 5 | 28.10 | <input type="checkbox"/> | Aersol deilvery |
| Brulin Corporation | Formula 815 GD | 5 | 77.10 | <input type="checkbox"/> | Aerosol deilvery |

Conclusion: One product showed moderate success as an aerosol cleaner.