

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 10/03/2008

Experimenters: Daniel Pina

ClientType: Lab

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To check these nontoxic industrial cleaning products for grease removal.

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Products were based on the compatibility of substrate and removal of foreign substance. Used 5% concentration and heated the samples at 135F. The coupons were immersed in a product for 5 minutes, rinsed for 30 seconds in tap water at 120F and dried in 30 seconds using compressed air is room temperature. Coupons were coated with industrial grease waste. Using a handheld swab and allowed to dry for 24 hours 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 |
|---|------------|----------|-----------|
| PCL of America<br>Hurisafe 9100 paint prep                    |            |          |           |
|   | 1.0072     | 0.9362   | 7.05      |
|   | 0.4219     | 0.3784   | 10.31     |
|   | 0.2757     | 0.3350   | -21.51    |
| Brulin Corportation<br>formula 815 MX AA                      |            |          |           |
|   | 2.1985     | 2.0443   | 7.01      |
|   | 0.2557     | 0.3972   | -55.34    |
|   | 0.5665     | 0.5539   | 2.22      |
| Ecolink Heavyweight   |            |          |           |
|   | 0.6772     | 0.6560   | 3.13      |
|   | 0.1384     | 0.1872   | -35.26    |
|   | 1.4277     | 1.4700   | -2.96     |
| BioGenesis<br>Enterpriseinc. BG<br>Clean 648                  |            |          |           |
|   | 0.6744     | 0.6088   | 9.73      |
|   | 0.8857     | 0.5671   | 35.97     |
|   | 1.0845     | 0.6947   | 35.94     |
| Chem free<br>corporation SW6<br>metals degreasing<br>solution |            |          |           |
|   | 1.0859     | 1.1063   | -1.88     |
|   | 0.5078     | 0.5323   | -4.82     |
|   | 0.7084     | 0.6632   | 6.38      |
| A1 Hydro Park Hill<br>Chemical Sw Wash 10<br>aircraft cleaner |            |          |           |
|   | 1.0106     | 0.7205   | 28.71     |
|   | 0.8730     | 0.6750   | 22.68     |
|   | 1.3727     | 1.0431   | 24.01     |

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|                                 |        |        |       |
|---------------------------------|--------|--------|-------|
| Brulin Corporation<br>Aqua Safe |        |        |       |
|                                 | 0.3560 | 0.3062 | 13.99 |
|                                 | 2.0617 | 2.0733 | -0.56 |
|                                 | 0.4210 | 0.4520 | -7.36 |

Summary:

|                               |   |               |                    |                          |                      |
|-------------------------------|---|---------------|--------------------|--------------------------|----------------------|
| <b>Substrates:</b>            | Stainless Steel                                   |               |                    |                          |                      |
| <b>Contaminants:</b>          | Greases   |               |                    |                          |                      |
| <b>Company Name:</b>          | <b>Product Name:</b>                              | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>        | <b>Observations:</b> |
| PCI of America                | Hurrisafe 9010                                    | 5             | -1.38              | <input type="checkbox"/> |                      |
| Brulin Corporation            | 815 QR  | 5             | -15.37             | <input type="checkbox"/> |                      |
| EcoLink                       | Heavy Weight Non Butyl Detergent                  | 5             | -11.70             | <input type="checkbox"/> |                      |
| BioGenesis Enterprises Inc    | BG Clean 648                                      | 5             | 27.21              | <input type="checkbox"/> |                      |
| Chem Free Corporation         | SW-6 Ozzy Juice Select Metals Degreasing Solution | 5             | -0.11              | <input type="checkbox"/> |                      |
| A 1 Hydro Parke Hill Chemical | SW Wash 10 Aircraft Cleaner                       | 5             | 25.13              | <input type="checkbox"/> |                      |
| Brulin Corporation            | Aqua Safe   | 5             | 2.02               | <input type="checkbox"/> |                      |

Conclusion:

With the data provided based on the results these three products BG Clean 648, SW Wash 10 Aircraft cleaner, and Aqua safe could perform much better at a higher concentration. This is based on the percentage of removal that these products performed under