

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008  
 DateRun: 06/23/2008  
 Experimenters: Jason Marshall, Shweta Bansal  
 ClientType: Chemical Company  
 ProjectNumber: Project #1  
 Substrates: Aluminum  
 PartType: Coupon  
 Contaminants: Resins/Rosins  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric  
 Purpose: To evaluate selected products for resin cleaning.

Experimental Procedure: Eight products were selected from the lab's on-line database, [www.cleansolutions.org](http://www.cleansolutions.org), based on supplied information from client. Each product was diluted to 5% using DI water in 600 ml glass beakers. Solutions were used at room temperature. Twenty-four preweighed aluminum coupons were coated with the Mereco ECN 809 Base Black resin using a swab. Coupons were weighed a second time to determine the amount of soil added. Three coupons were immersed into each product and cleaned for 5 minutes using no agitation. Following cleaning, coupons were rinsed for 15 seconds in tap water at 120 F and dried using air blow off for 30 seconds at room temperature. Final weights were recorded, and efficiencies were calculated.

Results: Only one of the eight products had any effect on the resin during immersion cleaning. The table lists the amount of resin added, the amount remaining and the efficiency for each coupon cleaned.

| Cleaner              | Initial wt | Final wt | % Removed |
|----------------------|------------|----------|-----------|
| Polyspray Jet 790 xs | 2.4839     | 2.4365   | 1.91      |
|                      | 2.5648     | 2.5610   | 0.15      |
|                      | 2.5668     | 2.5490   | 0.69      |
| Luminox              | 1.0467     | 0.9968   | 4.77      |
|                      | 4.5916     | 4.5480   | 0.95      |
|                      | 1.7731     | 1.8235   | -2.84     |
| Daraclean 282 GF     | 1.4360     | 1.4315   | 0.31      |
|                      | 1.1101     | 1.1072   | 0.26      |
|                      | 2.1659     | 2.1620   | 0.18      |
| Aquavantage 3800 Gd  | 2.4287     | 2.1280   | 12.38     |
|                      | 2.5287     | 2.1730   | 14.07     |
|                      | 1.7745     | 1.7773   | -0.16     |
| Amaizing Stripper    | 2.1694     | 1.8281   | 15.73     |
|                      | 2.1371     | 2.0148   | 5.72      |
|                      | 2.3150     | 2.1788   | 5.88      |
| Bean-e-doo           | 2.7812     | 2.7403   | 1.47      |
|                      | 2.2138     | 2.1210   | 4.19      |
|                      | 1.5519     | 1.5743   | -1.44     |
| BG Clean 617         | 2.1926     | 2.1863   | 0.29      |
|                      | 2.6816     | 2.6732   | 0.31      |
|                      | 2.9742     | 2.9775   | -0.11     |
| Smart Solve 605      | 2.0938     | 1.7721   | 15.36     |
|                      | 2.0214     | 1.0419   | 48.46     |
|                      | 2.9870     | 2.2441   | 24.87     |

Summary:

|                         |                      |               |                    |                          |                      |
|-------------------------|----------------------|---------------|--------------------|--------------------------|----------------------|
| <b>Substrates:</b>      | Aluminum             |               |                    |                          |                      |
| <b>Contaminants:</b>    | Resins/Rosins        |               |                    |                          |                      |
| <b>Company Name:</b>    | <b>Product Name:</b> | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>        | <b>Observations:</b> |
| US Polychem Corporation | Polyspray Jet 790 XS | 10            | 0.92               | <input type="checkbox"/> |                      |

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|                                   |   |    |       |                                     |  |
|-----------------------------------|---|----|-------|-------------------------------------|--|
| Alconox Inc                       | Luminox                                 | 10 | 0.96  | <input type="checkbox"/>            |  |
| Magnaflux                         | Daraclean 282 GF                        | 10 | 0.25  | <input type="checkbox"/>            |  |
| Brulin Corporation                | Aquavantage 3800 GD                     | 10 | 8.76  | <input type="checkbox"/>            |  |
| Green Products                    | aMAIZEing biobased solvent and stripper | 10 | 9.11  | <input type="checkbox"/>            |  |
| Franmar Chemical                  | Bean-e-doo (Parts Washer Solvent)       | 10 | 1.41  | <input type="checkbox"/>            |  |
| BioGenesis Enterprises Inc        | BG Clean 617                            | 10 | 0.16  | <input type="checkbox"/>            |  |
| United Laboratories International | Smart Solve 605                         | 10 | 29.56 | <input checked="" type="checkbox"/> |  |

Conclusion:

The Smart Solve 605 will be used in a follow up test at a higher concentration. In addition, semi-aqueous products will be selected for evaluation.