

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023  
 DateRun: 03/06/2023  
 Experimenters: Namrata Chauhan, Mei Jin  
 ClientType: Chemical Company  
 ProjectNumber: Project #1  
 Substrates: Plastic, Chrome, Painted metal  
 PartType: Coupon  
 Contaminants: Hucker's Soil  
 Cleaning Methods: Manual Wipe  
 Analytical Methods: Gravimetric  
 Purpose: To evaluate the efficacy of Bioneat with Hucker's soil

Experimental Procedure: Nine pre-weighed coupons, three of each substrate per cleaner, were contaminated with one gram of Hucker's soil using a handheld swab and air-dried at room temperature (68 F) for 24 hours. The contaminated coupons were weighed to record dirty weights before placing three coupons per cleaner of the same substrate into a Gardner Straight Line Washability (SLW) unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled. The Wypal and each coupon were treated with three sprays of the product and cleaned for 20 cycles (~30 seconds of cleaning). Cleaned coupons were wiped once with a dry paper towel before the final weights were taken.

| Cleaner | Substrate     | Final wt of cont. | %Cont Removed | % AVG  |
|---------|---------------|-------------------|---------------|--------|
| Bioneat | Plastic       | -0.0019           | 101.14        | 100.60 |
|         |               | -0.0004           | 100.24        |        |
|         |               | -0.0007           | 100.43        |        |
|         | Chrome        | 0.0069            | 95.49         | 96.19  |
|         |               | 0.0058            | 96.39         |        |
|         |               | 0.0053            | 96.68         |        |
|         | Painted metal | 0.0172            | 89.69         | 90.87  |
|         |               | 0.0112            | 93.40         |        |
|         |               | 0.0179            | 89.53         |        |

\* Plastic coupon's final weight was lower than the initial weight.  
 Some soil was left on the painted metal.

|                      |                      |   |                    |                                     |   |
|----------------------|----------------------|---|--------------------|-------------------------------------|---|
| Summary:             |                      | <b>Substrates:</b> Plastic, Chrome, Painted metal |                    |                                     |   |
|                      |                      | <b>Contaminants:</b> Hucker's Soil                |                    |                                     |   |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b>                                     | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b>  |
| Durkin Company       | Bioneat              | 6:1   | 95.88              | <input checked="" type="checkbox"/> | Overall percent efficacy 95.88%. Bioneat was most effective on plastic than the other substrates. |

Conclusion: Bioneat is an effective cleaner to remove soil from the coupons.