

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 02/27/2024

Experimenters: Amelia Wagner

ClientType: Lab

ProjectNumber: Project #13

Substrates: Aluminum, Stainless Steel

PartType: Coupon

Contaminants: Food

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: Redo Benchmark Testing of BevSafe cleaner: unheated ultrasonics with rinse step

Experimental Procedure: Three pre weighed coupons of both stainless steel and aluminum were used per soil for two cleaners for a total of 12 coupons. Half of the coupons were soiled with tea and tea leaves with a swab. The other half were soiled with coffee and coffee grounds with a swab. The coupons were then baked in the oven or 40 minutes at a temperature of 200 F to adhere the soils to the coupons and to initiate staining. The dirty weights of the coupons were then recorded. The coupons were then subjected to 20 minutes of unheated immersion with BevSafe Line and Tank Cleaner at a dilution of 4.5%. After removing the coupons from the cleaner, they were rinsed in a beaker of clean DI water. The coupons were allowed to dry overnight before clean weights were recorded.

| Results: | Substrate | Soil | Initial wt of cont. | Final wt of cont. | %Cont Removed | % AVG | % Overall |
|----------|-----------------|------------------------|---------------------|-------------------|---------------|--------|-----------|
| | Stainless Steel | Pigeon Cove Tea Leaves | 0.0998 | 0.0001 | 99.90 | 99.57 | 94.62 |
| | | | 0.1474 | 0.0002 | 99.86 | | |
| | | | 0.0749 | 0.0008 | 98.93 | | |
| | | Coffee | 0.0208 | 0.0005 | 97.60 | 89.67 | |
| | | | 0.0042 | 0.0006 | 85.71 | | |
| | | | 0.0042 | 0.0006 | 85.71 | | |
| | Aluminum | Pigeon Cove Tea Leaves | 0.0420 | -0.0413 | 198.33 | 180.09 | 180.09 |
| | | | 0.0864 | -0.0446 | 151.62 | | |
| | | | 0.0454 | -0.0410 | 190.31 | | |
| Coffee | | 0.0042 | NA | NA | NA | | |
| | | 0.4496 | NA | NA | | | |
| | | 0.0051 | NA | NA | | | |

The aluminum coupons soiled with coffee were not tested after it became apparent that the product would strip the substrate.

Summary:

Conclusion: BevSafe Line and Tank Cleaner 4.5% is much more effective utilizing unheated immersion when a rinse step is added post cleaning.