# CLEANING LABORATORY EVALUATION SUMMARY

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|---|---|
| SCL #: | 2024 |
| DateRun: | 02/20/2024 |
| Experimenters: | Amelia Wagner |
| ClientType: | Lab |
| ProjectNumber: | Project #13 |
| Substrates: | Stainless Steel |
| PartType: | Coupon |
| Contaminants: | Food |
| Cleaning Methods: | Immersion/Soak |
| Analytical Methods: | Gravimetric, Visual |
| Purpose: | Benchmark Testing of BevSafe products: Unheated Immersion |
| Experimental Procedure: | Three pre weighed coupons 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 and visual rankings were then recorded. The coupons were then subjected to 20 minutes of unheated immersion in their respective cleaners with a stir bar set to 300 rpm. The cleaners were used at the vendor recommended concentrations (BevSafe descaler 1%, BevSafe tank and line cleaner 4.5%). The coupons were then removed from the cleaner and the clean visual rankings were recorded. The coupons were allowed to dry overnight before clean weights were recorded. Visual rankings were based on the key below. |

Visual Rankings

1= 100% soil removed

2= 75% soil removed

3= 50% soil removed

4= 25% soil removed

5= 0% soil removed

Results:

| Cleaner | Soil | Dirty Visual | Clean Visual | AVG Clean Visual | AVG Overall |
|---|---|---|---|---|---|
| BevSafe Descaler 1% | Pigeon Cove Tea Leaves | 5 | 1.5 | 1.7 | 1.75 |
| | | 5 | 2.0 | | |
| | | 5 | 1.5 | | |
| | Coffee | 5 | 2.5 | 1.8 | |
| | | 5 | 1.5 | | |
| | | 5 | 1.5 | | |
| BevSafe Line and Tank Cleaner 4.5% | Pigeon Cove Tea Leaves | 5 | 3 | 3.2 | 2.75 |
| | | 5 | 3.5 | | |
| | | 5 | 3 | | |
| | Coffee | 5 | 3 | 2.3 | |
| | | 5 | 2 | | |
| | | 5 | 2 | | |

| Cleaner | Soil | Initial wt of cont. | Final wt of cont. | %Cont Removed | % AVG | % Overall |
|---|---|---|---|---|---|---|
| BevSafe Descaler 1% | Pigeon Cove Tea Leaves | 0.0645 | 0.0000 | 100.00 | 96.79 | 83.36 |
| | | 0.1169 | 0.0037 | 96.83 | | |
| | | 0.1096 | 0.0071 | 93.52 | | |
| | Coffee | 0.0187 | 0.0061 | 67.38 | 69.93 | |
| | | 0.0041 | 0.0011 | 73.17 | | |
| | | 0.0052 | 0.0016 | 69.23 | | |
| BevSafe Line and Tank Cleaner 4.5% | Pigeon Cove Tea Leaves | 0.1495 | 0.0169 | 88.70 | 82.55 | 76.19 |
| | | 0.0944 | 0.0268 | 71.61 | | |

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|---|---|---|---|---|---|---|
| | | 0.1760 | 0.0223 | 87.33 | | |
| | Coffee | 0.0062 | 0.0017 | 72.58 | 69.82 | |
| | | 0.0032 | 0.0009 | 71.88 | | |
| | | 0.0020 | 0.0007 | 65.00 | | |

Summary:

Conclusion: The BevSafe Descaler 1% was effective in removing the tea staining and tea leaves from the stainless steel coupons, but was less effective at removing the coffee staining and coffee grounds. The BevSafe Line and Tank Cleaner was not effective in removing either soil