

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024  
 DateRun: 02/21/2024  
 Experimenters: Amelia Wagner  
 ClientType: Lab  
 ProjectNumber: Project #13  
 Substrates: Stainless Steel  
 PartType: Part  
 Contaminants: Food  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric, Visual  
 Purpose: Benchmark Testing of BevSafe products: Heated 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 for 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 10 minutes of heated immersion in their respective cleaners with a stir bar set to 300 rpm at 140 F. 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	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
BevSafe Descaler 1%	Pigeon Cove Tea Leaves	0.0545	0.0000	100.00	98.65	99.33
		0.0251	0.0007	97.21		
		0.0479	0.0006	98.75		
	Coffee	0.0207	0.0000	100.00	100.00	
		0.0195	0.0000	100.00		
		0.0218	0.0000	100.00		
BevSafe Line and Tank Cleaner 4.5%	Pigeon Cove Tea Leaves	0.0785	0.0009	98.85	99.18	95.28
		0.0696	0.0004	99.43		
		0.0402	0.0003	99.25		
	Coffee	0.0105	0.0006	94.29	91.38	
		0.0102	0.0014	86.27		
		0.0140	0.0009	93.57		
Cleaner	Soil	Dirty Visual	Clean Visual	AVG Clean Visual	AVG Overall	
BevSafe Descaler 1%	Pigeon Cove Tea Leaves	5	1.0	1.0	1.00	
		5	1.0			
		5	1.0			
	Coffee	5	1.0	1.0		
		5	1			
		5	1			
BevSafe Line and Tank Cleaner 4.5%	Pigeon Cove Tea Leaves	5	1	1.0	1.42	
		5	1			

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		5	1	
	Coffee	5	1.5	1.8
		5	2	
		5	2	

Visually, a small amount of coffee grounds remained on the coupons cleaned with BevSafe Line and Tank Cleaner

Summary:

Conclusion: Both products were highly effective in removing both soils utilizing heated immersion. It should be noted that although gravimetrically the Line and Tank Cleaner was highly effective in removing both soils, small amounts of coffee grounds visually remained on the coupons soiled with coffee after cleaning. This may be important for concerns of allergens and contamination between products.