CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2025

DateRun: 05/12/2025

Experimenters: Amelia Wagner

ClientType:

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Food

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: Continued testing to compare efficacy of products at lower concentrations than vendor recommended 50%

Experimental Procedure: Stainless steel coupons were chosen and had their initial weights recorded before beginning the 'brewing' process. To begin the 'brewing process' a slurry of 1.5 lbs of dry malt extract and warm water was made and added to 2 gallons of boiling water in the brewing pot. An entire packet of hops was then added to the brewing pot and continued to boil for ~1 hour until wort was created. The wort was allowed to cool to room temperature before transferring it into the plastic fermentation bucket. 6-7 grams of dry yeast was rehydrated with a small amount of warm water, and was left to rest for 5 minutes. The dry yeast mixture was then added into the fermentation bucket (without stirring). The coupons were hung in the fermentation bucket with fishing line so that the bottom of each coupon sat just above the wort level. The fermentation bucket was covered and left to ferment for 72 hours, checking for yeast activity every day. Once the coupons were removed, they were baked in the oven at 250F to fully solidify the yeast and hops soil to the surface. At this point, the dirty weights of the coupons were then recorded.

To clean, the coupons were subjected to 20 minutes of immersion in their respective cleaners with a stir bar set to 300rpm. After cleaning, each coupon was rinsed with tap water for 10 seconds. After allowing the coupons to air dry, the clean weights were recorded.

Results:

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
Eco Safeway High pH cleaner 10%	0.0420	0.0018	95.71	89.41
	0.0130	0.0019	85.38	
	0.0171	0.0022	87.13	
Eco Safeway Descaler60 10%	0.0144	0.0007	95.14	92.50
	0.0082	0.0008	90.24	
	0.0152	0.0012	92.11	
Eco Safeway High pH cleaner 50%	0.0259	0.0005	98.07	97.73
	0.0289	0.0005	98.27	
	0.0317	0.0010	96.85	
Eco Safeway Descaler60 50%	0.0223	0.0004	98.21	98.71
	0.0203	0.0003	98.52	
	0.0171	0.0001	99.42	

Summary:

Substrates:	Stainless Steel
Contaminants:	Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Eco Safeway	Eco Safeway High pH Cleaner	10%	89.41	☑	Temp: ambient, P2OASys Hazard Score: 4
Eco Safeway	Eco Safeway Descaler60	10%	92.50	☑	Temp: ambient, P2OASys Hazard Score: 4.1
Eco Safeway	Eco Safeway High pH Cleaner	50%	97.73	☑	Temp: ambient, P2OASys Hazard Score: 4

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Eco Safeway	Eco Safeway Descaler60	50%	98.71	☑	Temp: ambient, P2OASys Hazard Score: 4.1
Five Star	PBW Powdered Alkaline Based Cleaner	For hazard score comparison		☐	P2OASys Hazard Score: 4.8
Five Star	Five Star Chemicals Acid Cleaner	For hazard score comparison		☐	P2OASys Hazard Score: 6.4
Chemstation International	CIP Caustic Cleaner 5028	For hazard score comparison		☐	P2OASys Hazard Score: 6

Conclusion: Both products remained highly effective at the reduced concentration of 10%, but a slight reduction in efficacy compared to a 50% concentration was observed.