CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2022

DateRun: 08/10/2022

Experimenters: Amelia Wagner

ClientType: Food Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Food

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of Lactic acid as a cleaner in conjunction with Lactic acid as a sanitizer in cleaning and sanitizing stainless steel alloys 304 and 316 (in one step as opposed to separate cleaning and sanitizing steps).

Experimental Procedure: Six stainless steel coupons were used, three being the 304 alloy and three being the 316 alloy. The initial weights of each coupon were taken. The coupons were then soiled with Cedar's Chocolate Hommus by wiping a thin layer, but leaving some chunky spots, and the bottom half of the substrate. The dirty weights of each coupon were then taken. Coupons were immersed in the heated cleaner Lactic acid 0.15% (140 F) and put in the ultrasonics machine for 20 mins. The cleaned coupons were left to air dry for 8 hours. ATP levels were measured using Hygenia ATP Swabs followed by clean weights being taken for each coupon.

Results:

Cleaner	Substrate	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
LFE Enzymatic Cleaner	Stainless steel 304	0.2979	0.0021	99.30	99.01	98.60
		0.3049	0.0032	98.95		
		0.3226	0.0039	98.79		
LFE Enzymatic Cleaner	Stainless Steel 316	0.2761	0.0082	97.03	98.19	
		0.2841	-0.0007	100.25		
		0.2596	0.0070	97.30		

Visually, some chocolate hommus was left on the coupon after cleaning.

ATP Results

Cleaner	Substrate	ATP Level	Avg	Overall
Lactic Acid Sanitizer	Stainless Steel 304	67	39.67	36.83
		31		
		21		
Lactic Acid Sanitizer	Stainless Steel 316	44	34	
		26		
		32		

Summary:

Conclusion: Lactic acid Cleaner 0.15% (1400 F) is not an effective cleaner for removing chocolate hummus from stainless steel alloys 304 and 316. Lactic Acid 0.15% is not an effective sanitizer when cleaning step and sanitizing step are combined into one step.