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 Caprylic acid sanitizer in cleaning and sanitizing stainless steel alloys 304 and 316.

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 cleaner 0.15% (140 F) and put in the ultrasonics machine for 20 mins. Directly after removing the coupons from the cleaner, they were then immersed in the sanitizer Caprylic acid sanitizer 0.15% at room temperature (68 F) and put in the ultrasonics machine for five minutes. 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
Lactic acid cleaner	Stainless steel 304	0.2290	0.0119	94.80	97.82	98.46
		0.4918	0.0102	97.93		
		0.2747	-0.0020	100.73		
Lactic acid cleaner	Stainless Steel 316	0.2209	0.0029	98.69	99.10	
		0.4539	0.0039	99.14		
		0.6083	0.0033	99.46		

Visually, some chocolate hommus was left on coupons

ATP Results

Cleaner	Substrate	ATP Level	Avg	Overall
Caprylic Acid Sanitizer	Stainless Steel 304	14	10.33	10.33
		15		
		2		
Caprylic Acid Sanitizer	Stainless Steel 316	8	10.33	
		13		
		10		

Summary:

Conclusion: Lactic acid is not an effective cleaner for stainless steal alloys 304 and 316. Caprylic acid is not an effective sanitizer for stainless steel alloys 304 and 316.