

# 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.

| 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 | 98.19     |
|                       |                     | 0.2841              | -0.0007           | 100.25        |       |           |
|                       |                     | 0.2596              | 0.0070            | 97.30         |       |           |

Visually, some chocolate hummus 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    | 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.