CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2017
DateRun:	05/10/2017
Experimenters:	George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #8
Substrates:	Aluminum, Stainless Steel
PartType:	Coupon
Contaminants:	Greases, Oil, Food
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied product for DCC-12 oven soil removal from stainless steel and aluminum surfaces with an initial soak in solution prior to following TURI's cleaning method for manual cleaning.

Experimental Procedure:

The following experimental procedure is in accordance to TURI's cleaning standard operating procedure for manual dish cleaning using a partially aged DCC-12 soil.

Soiling Process:

A set of pre-weighed stainless steel and aluminum coupons were contaminated with 0.5 grams of DCC-12 soil using a handheld swab onto the center of the coupon's surfaces. DCC-12 was made with the following ingredients: Butter 85.4%, Sugar 6.5%, Deionized Water 4.3%, and Flour 3.4%. The coupons were then let to age in the oven at 450 F for 25 minutes (normal DCC 12 aging is 2 hours). After the aging of the soil, the coupons were let to sit at room temperature to cool down for 20-30 minutes before reweighing again to determine the amount of contaminant added.

Cleaning Process:

Three soiled substrates were immersed into the respective cleaning agent for 5 minutes at a temperature bath of 110 F and followed by cleaning in the Gardner Straight Line Washability unit for 20 cycles (~33 seconds). The cleaning solutions were diluted to the desired concentrations specified by the vendor. Two Wypall X60 reinforced wipe was attached to the cleaning sled prior to running the SLW.

Efficacy Rating Process:

The substrates were left to dry at room temperature for an hour before weighing to determine the amount of contaminant removed.

Results:

The objective of the experiment was to compare the efficacy of the sampled cleaners: Vi-Jon Premium Pot & Pan and Brady Premium Pot & Pan through gravimetric and visual efficacy evaluations.

Comparative Analysis

Vi-Jon Premium Pot & Pan had a similar efficacy rating as the Brady Premium Pot & Pan with respective ratings of 88.24% and 90.24%. On aluminum coupons, Vi-Jon Premium Pot & Pan had an efficacy that was comparable to Brady Premium Pot & Pan, with respective ratings of 96.33% and 98.40%. Table pertaining to the amount of contaminant added and removed using a gravimetric scale by its respective cleaning agent to measure the efficacy of the cleaners.

Cleaner	Initial wt (g)	Final wt (g)	% Removed
Brady Premium Pot and Pan Stainless Steel			
	0.373	0.0137	96.33
	0.3597	0.0235	93.47
	0.3386	0.0646	80.92
Brady Premium Pot and Pan Aluminum			
	0.3719	0.0057	98.47
	0.3723	0.0079	97.88
	0.3677	0.0042	98.86
Vi-Jon Premium Pot and Pan Stainless Steel			
	0.3572	0.0222	93.78
	0.3434	0.077	77.58

CLEANING LABORATORY EVALUATION SUMMARY

	0.3839	0.0255	93.36
Vi-Jon Premium Pot and Pan Aluminum			
	0.3713	0.0229	93.83
	0.3756	0.0076	97.98
	0.3733	0.0105	97.19

Summary:

Substrates:	Aluminum, Stainless Steel				
Contaminants:	Greases, Oil, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brady Industries	Brady Premium Pot and Pan	0.2	94.32	☑	
Vi-Jon	Vi-Jon Premium Pot and Pan	0.2	92.29	☑	

Conclusion:

In conclusion, the most effective to least effective cleaning agent for DCC-12 soil removal with a prior soak in cleaning solution is listed in the following order: Brady Premium Pot & Pan; Vi-Jon Economy Pot & Pan; Vi-Jon Premium Pot & Pan; Brady Pot & Pan.