CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2017
DateRun:	05/09/2017
Experimenters:	George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #8
Substrates:	Aluminum, Stainless Steel
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied product for DCC-12 oven soil removal from stainless steel and aluminum surfaces following TURI's all-purpose cleaning method.

Experimental Procedure:

The following experimental procedure is in accordance with TURI's cleaning standard operating procedure for all-purpose cleaning substituting 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 aged in the oven at 450 oF for 25 minutes (normal aging time for DCC 12 is 2 hours). After the aging of the soil, the coupons were allowed 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 placed into a Gardner Straight Line Washability unit. Two Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 1 spray of cleaning solutions. The cleaning solutions were diluted to the desired concentrations specified by the vendor and heated to a temperature of 110 oF. Each substrate was sprayed 1 time with the same cleaning solution. The solution was allowed to penetrate for 30 seconds. This was followed by cleaning in the SLW unit for 20 cycles (~33 seconds).

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 is to compare the efficacy of the sampled cleaners: Vi-Jon Economy Pot & Pan with the comparative cleaners Brady Pot & Pan through gravimetric and visual efficacy evaluations.

Comparative Analysis:

The Vi-Jon Economy Pot & Pan was slightly more effective on stainless steel surfaces than the Brady Pot & Pan. Respective ratings of 96.18% and 91.00%. On aluminum coupons, Vi-Jon Economy Pot & Pan had a similar efficacy as Brady Pot & Pan; with respective ratings of 94.64% and 95.80%. 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 Pot and Pan Aluminum			
	0.3893	0.0082	97.89
	0.3826	0.0131	96.58
	0.3922	0.0277	92.94
Brady Pot and Pan Stainless Steel			
	0.3683	0.0234	93.65
	0.3333	0.0214	93.58
	0.4123	0.0586	85.79
Vi-Jon Economy Pot and Pan Aluminum			
	0.3972	0.0236	94.06
	0.3647	0.0138	96.22

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	0.3966	0.0252	93.65
Vi-Jon Economy Pot and Pan Stainless Steel			
	0.3777	0.0310	91.79
	0.4728	0.0149	96.85
	0.3957	0.0004	99.90

Summary:

Substrates:	Aluminum, Stainless Steel				
Contaminants:	Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brady Industries	Brady Pot and Pan	0.78	93.40	☑	
Vi-Jon	Vi-Jon Economy Pot and Pan	0.78	95.41	☑	

Conclusion: The supplied products from Vi-Jon compared equally with the Brady brand products.