CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2013
DateRun:	10/16/2013
Experimenters:	Junhee Cho, Loc Nguyen
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate the supplied products for general cleaning application on a second soil

Experimental Procedure:

The supplied cleaning products were used at the recommended operating procedures. The supplied unit was run through two process cycles using 1 gram salt and 1.5 liter water. Water also was included.

Preweighed stainless steel coupons were coated with a hydration soil mixture containing pancake mix, barbeque sauce, chocolate syrup and water (35 g, 50 g, 45 g and 10 g). The mixture was applied to the surface using a hand held swab, followed by using a pull down bar skimmer to generate a uniform thickness across the entire surface. Once all tiles for the soil were coated, tiles were placed in a convection oven at 100 °F (37.8 °C) and aged 18-20 hours. Once cooled, dirty weights were recorded.

Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and and soaked with a three second spray duration on each coupon. This was equivalent of the typical 2 squirts used for conventional cleanser bottles. The units were held at a 6-8” distance from the test coupons. In addition tap water was used and Seventh Generation All Purpose cleaner (RTU). The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.

ChemistriesEvaluated: Toucan Cleaner (1 g salt/1.5 L - pH 8-9; Free Chlorine 100 ppm); Proforce Multipurpose 3.125%; Zep All Purpose 100%; Water

Results:

The original technology system on stainless steel had successful removal of the hydration soil using manual wiping. The table lists the amount of soil added, the amount remaining after cleaning and the calculated efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Toucan			
	0.5399	0.1320	75.55
	0.5436	0.1356	75.06
	0.7746	0.287	62.95
Proforce			
	0.4259	0.2097	50.76
	0.5053	0.4339	14.13
	0.7026	0.4731	32.66
Zep All Purpose			
	0.3766	0.0435	88.45
	0.3661	0.0704	80.77
	0.3398	0.0383	88.73
Water			
	1.2307	0.7661	37.75
	1.6378	1.1350	30.70
	1.7929	1.1950	33.35

Summary:

Substrates:	Stainless Steel				
Contaminants:	Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Toucan	Toucan Eco	100	71.18	☑	
ZEP Manufacturing Company	Zep Industrial Purpose Cleaner	100	85.98	☑	
Water	Water	100	35.05		

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EcoLab	Proforce Multipurpose Pine Cleaner	5	32.52	☐	

Conclusion: The hydration soil was not easily removed using three of the four cleaning methods. The Zep All Purpose product removed more than 85% of the soil and Toucan Eco removed about 70%. Water and ProForce removed less than 40%.