TURI SURFACE SOLUTIONS LABORATORY
EVALUATION SUMMARY

SCL #: 2012-20-352-1-4-
Date Run: 2/14/2013
Experimenters: Geng; Le;
Client Type: Chemical Mfr;
Project Number: 1
Substrates: Ceramics; Plastic; Chrome;
Part Type: Coupons;
Contaminants: Films; Soaps;
Cleaning Methods: Manual Wipe;
Analytical Methods: Gravimetric;
Purpose: To evaluate supplied product tablet for bathroom cleaning
Experimental Procedure: The supplied cleaning product was used at the recommended concentration (2.5g per 16 ounces water). A comparative product was used at the ready-to-use concentration.

Preweighed chrome, ceramic and fiberglass, coupons were coated with SSL Soil 1 (Bathroom soap scum: All-in-one shampoo and conditioner 28.6%, Dry skin lotion 21.4%, Liquid hand soap 21.4%, Liquid body wash 14.3%, Deodorant bar soap 7.2% and water 7.1%.) using a hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

Three coupons were placed into a Gardner Straight Line Washability unit. A Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 2-3 sprays of cleaning solutions. Each coupon was sprayed 2-3 times with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies were calculated and recorded.

Chemistries Evaluated: DAZZ Bathroom Tablet; Clorox Bathroom Cleaner RTU;

Results:

Both products removed more than 90% of the bathroom soap scum mixture using manual wiping for 30 seconds. The table lists the amount of soil added, the amount remaining and the efficiency of each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
DAZZ - ceramic			
	0.0692	0.0002	99.71
	0.0417	0.0006	98.56
	0.0674	0.0008	98.81
DAZZ - plastic			
	0.0344	0.0006	98.26
	0.0204	0.0010	95.10
	0.0318	0.0013	95.91
DAZZ - chrome			
	0.0388	0.0012	96.91
	0.0392	0.0017	95.66
	0.0317	0.0029	90.85
Clorox - ceramic			
	0.0601	0.0019	96.84
	0.0465	0.0061	86.88
	0.0439	0.0004	99.09
Clorox - plastic			
	0.0568	0.0010	98.24
	0.0281	0.0004	98.58
	0.0536	0.0029	94.59
Clorox - chrome			
	0.0463	0.0025	94.60
	0.0430	0.0016	96.28
	0.0333	0.0005	98.50

Summary

Substrates: Ceramics; Plastic; Chrome;
Contaminants: Soaps; Films;

Company Name:	*Product Name*	*Conc.*	*Efficiency*	*Effective*
Sunstate Laboratory LLC	DAZZ Bathroom Cleaner Tablet	2.5g/16oz	96.64	Yes
Clorox	Bathroom Cleaner RTU	100	95.95	Yes

Conclusion: The supplied product worked as well as the on-the-market product for bathroom cleaning.

TURI SURFACE SOLUTIONS LABORATORY
EVALUATION SUMMARY

SCL #: 2012-20-352-0-4-
Date Run: 11/9/2012
Experimenters: Geng; Nguyen; Le; Le;
Client Type: Chemical Mfr;
Project Number: 1
Substrates: Ceramics; Plastic; Steel;
Part Type: 2
Contaminants: Greases; Oil; Food;
Cleaning Methods: Manual Wipe;
Analytical Methods: Gravimetric;
Purpose: To evaluate supplied tablet for all purpose cleaning
Experimental Procedure: The provided product tablet (~2.5grams) was dissolved in 16 ounces of water. A comparative product was used at the ready-to-use concentration.

Pre-weighed ceramic, plastic and painted steel coupons were coated with a mixture of shortening (33%), lard (33%) and cooking oil(33%) using a hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

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 soaked with 2-3 sprays of cleaning solutions. Each coupon was sprayed 1-2 times with the same cleaning solution. 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.

Chemistries Evaluated: DAZZ All Purpose; Formula 409 All Purpose Cleaner;

Results: Both products removed more than 95% of the soil using manual wiping for 30 seconds. The table lists the amount of soil added, the amount remaining and the efficiency of each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
DAZZ All Purpose - Ceramic			
	0.0801	0.0025	96.88
	0.0846	0.0055	93.50
	0.0360	0.0043	88.06
DAZZ All Purpose - Painted Steel			
	0.0538	0.0037	93.12
	0.0746	0.0024	96.78
	0.0659	0.0039	94.08
DAZZ All Purpose - Plastic			
	0.0889	0.0013	98.54
	0.0833	0.0066	92.08
	0.1058	0.0109	89.70
Formula 409 - Ceramic			
	0.0807	0.0049	93.93
	0.0742	0.0047	93.67
	0.0769	0.0098	87.26
Formula 409 - Painted Steel			
	0.0563	0.0026	95.38
	0.0630	0.0042	93.33
	0.0805	0.0072	91.06
Formula 409 - Plastic			
	0.0819	0.0087	89.38
	0.0767	0.0028	96.35
	0.1255	0.0050	96.02

Summary

Substrates: Ceramics; Plastic; Steel;
Contaminants: Greases; Oil; Food;

Company Name:	*Product Name*	*Conc.*	*Efficiency*	*Effective*
Sunstate Laboratory LLC	DAZZ All Purpose Cleaner Tablet	2.5g/16oz	93.64	Yes
Clorox	Formula 409 All Purpose Cleaner	100	92.93	Yes

Conclusion: The supplied product worked as well as an on-the market all purpose cleaning product.

TURI SURFACE SOLUTIONS LABORATORY
EVALUATION SUMMARY

SCL #: 2012-20-352-2-4-
Date Run: 11/7/2012
Experimenters: Geng; Le;
Client Type: 17
Project Number: 1
Substrates: Glass/Quartz; Chrome;
Part Type: 2
Contaminants: Films; Soaps;
Cleaning Methods: Manual Wipe;
Analytical Methods: Gravimetric; Visual;
Purpose: To evaluate the supplied tablet product for glass cleaning using manual wiping.
Experimental Procedure: The supplied product was diluted with water to the requested dilution (1.5 grams/16 ounces). A comparative product was used at the ready-to-use concentration.

Pre-weighed chrome and three glass coupons were coated with SSL Soil 2 (Glass soap scum: Water 51.5%, Hair gel 25.6%, Toothpaste 10.4%, Shaving cream 5.3%, Hair spray 3.7% and Spray deodorant 3.5%) using a hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added.

Three coupons were placed into a Gardner Straight Line Washability unit. A Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 1-2 sprays of cleaning solutions. Each coupon was sprayed 2-3 times with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 5 cycles (~10 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded and efficiencies recorded. Visual observations were made on the coupons for spotting and filming following the general guidelines set forth in the CSPA DCC 09A. Filming is best recognized as "haziness" or overall "milkiness", while streaking is best identified as dried droplets or "spotting", usually found strung together into thin white lines. Each coupon was evaluated separately for filming and streaking, (i.e., product residues without added soil), according to a scale of "1" to "7" with;

Filming	Streaking
7 = high filming	7 = high streaking poor (performance)
1 = no visible filming	1 = no visible streaking (excellent performance)

Chemistries Evaluated: DAZZ Glass Cleaning Tablet; Windex;

Results: Both products removed more than 85% of the glass soap scum using manual cleaning. The on-the-market product was slightly better at reducing any filming on the surface than the supplied product. Both had equal ratings for streaking. Filming had the supplied product at 3.2 and the on-the-market product at 2.8. Both products were rated on average at 3.6 for streaking on the 7 point scale. The first table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned. The second table lists the ratings made for filming and streaking.

Cleaner	Initial wt	Final wt	% Removed
DAZZ - mirror			
	0.0153	0.0018	88.24
	0.0073	0.0026	64.38
	0.0152	0.0028	81.58
DAZZ - glass			
	0.0153	0.0019	87.58
	0.0124	0.0006	95.16
	0.0101	0.0001	99.01
DAZZ - chrome			
	0.0161	0.0021	86.96
	0.0185	0.0024	87.03
	0.0281	0.0024	91.46
Windex - mirror			
	0.0191	0.0040	79.06
	0.0136	0.0027	80.15
	0.0087	0.0024	72.41
Windex - glass			
	0.0208	0.0014	93.27
	0.0217	0.0036	83.41
	0.0112	0.0006	94.64
Windex - chrome			
	0.0177	0.0025	85.88
	0.0365	0.0026	92.88
	0.0373	0.0035	90.62

Filming	Observer										
Coupon	A			B			C			Coupon Ave	Product Ave
1A	4	5	4	4	4	4	4	4	4	4.1	3.2
1B	2	2	2	1	2	1	2	1	2	1.7	
1C	4	4	3	4	4	4	4	4	4	3.9	
2A	3	3	3	2	2	2	3	3	2	2.6	2.8
2B	2	2	3	2	2	2	2	2	2	2.1	

2C	3	3	4	4	3	4	4	4	4	3.7	
Streaking Observer											
Coupon	A			B			C				
1A	5	5	4	4	4	4	5	4	4	4.3	3.6
1B	2	2	2	2	2	2	2	1	2	1.9	
1C	5	4	4	4	5	4	4	5	5	4.4	
2A	5	5	4	4	4	4	5	4	4	4.3	3.6
2B	2	2	3	3	3	3	3	2	3	2.7	
2C	3	3	3	4	4	4	4	4	4	3.7	

Summary

Substrates: Glass/Quartz; Chrome;

Contaminants: Films; Soaps;

CompanyName:	*Product Name*	*Conc.*	*Efficiency*	*Effective*	*Observations*
Sunstate Laboratories LLC	DAZZ Glass tablet	1.5 g/16/oz	86.82	Yes	Filming - 3.2; Streaking 3.6
SC Johnson & Son Inc	Windex	100	85.81	Yes	Filming - 2.8; Streaking 3.6

Conclusion:

The supplied tablet glass cleaner worked as well as the on-the-market product for soil removal and streaking and was only marginal less in the amount of filming left behind.