

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2011
 DateRun: 04/05/2011
 Experimenters: Johnny Le
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #1
 Substrates: Plastic, Stainless Steel
 PartType: Coupon
 Contaminants: Greases, Food
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric, Visual

Purpose: To evaluate supplied product for kitchen grease cleaning

Experimental Procedure: Prew weighed Polycarb and stainless-steel coupons were coated with a DCC-17 kitchen grease mix (lard, vegetable shortening, vegetable oil) using a handheld swab. Coupons sat over night to allow the grease to cool/harden onto the surfaces (if possible). After sitting, a second weighing was performed to determine the amount of grease that was added to each coupon. Three coupons were immersed into cleaning solutions at room temperature and cleaned for 25 minutes. At the end of the cleaning, coupons were rinsed for 30 seconds with tap water, dried and weighed. Efficiency was calculated for each coupon cleaned. A follow up 30 second rinse with tap water was used to remove any remaining residue on the surface. The coupons were dried and weighed a final time. Efficiency was calculated a final time for each coupon cleaned.

In addition to the gravimetric analysis, visual observations were made.

Results: Neither product was consistently successful in removing the kitchen grease from the two substrates. In both cases, residue was left behind on the polycarbonate surfaces. The comparative products worked better than the supplied product under the conditions tested for the stainless steel. The table below lists the amount of soil added, the amount remaining, the removal efficiency and observations made.

1st Rinse

Cleaner	Initial wt.	Final wt.	% Cont Removed	Observations	Substrate Average
Delta Green Heavy Duty Cleaner Polycarb					
	0.0334	0.044	-31.74	Cleaner residue on surface	-27.59%
	0.0289	0.039	-34.95	Cleaner residue on surface	
	0.0217	0.0252	-16.13	Cleaner residue on surface	
Delta Green Heavy Duty Cleaner Stainless steel					
	0.0218	0.0031	85.78	Visually cleaner vs TAP S.S	87.27%
	0.0158	0.0012	92.4		
	0.0189	0.0031	83.6		
TAP Kitchen Cleaner Polycarb					

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	0.0229	0.0139	39.3	Cleaner residue on surface	47.24%
	0.0243	0.0138	43.21	Cleaner residue on surface	
	0.0206	0.0084	59.22	Cleaner residue on surface	
TAP Kitchen Cleaner Stainless steel					
	0.0357	0.0119	66.67		
	0.0357	0.0462	-29.41		
	0.0365	0.0164	55.07		

The second rinse resulted in an improvement for both cleaning products from both surfaces. The comparative product still outperformed the supplied product on the stainless steel but the supplied product removed more from the polycarbonate. The overall averages for both surfaces resulted in both products removing around 60% of the grease.

2nd Rinse

Cleaner	Initial wt.	Final wt.	% Cont Removed	Observations	Substrate Average
Delta Green Heavy duty cleaner Polycarb					
	0.0334	0.0162	51.49		34.76%
	0.0289	0.0195	32.52		
	0.0217	0.0173	20.27		
Delta Green Heavy duty cleaner Stainless Steel					
	0.0218	0.0024	88.99		90.86%
	0.0158	0.0005	96.83		
	0.0189	0.0025	86.77		
TAP Kitchen cleaner Polycarb					
	0.0229	0.0127	44.54		51.77%
	0.0243	0.0126	48.14		
	0.0206	0.0077	62.62		
TAP Kitchen cleaner Stainless Steel					
	0.0357	0.0082	77.03		67.37%
	0.0357	0.0154	56.86		
	0.0365	0.0116	68.21		

Summary:

Substrates:	Plastic, Stainless Steel				
Contaminants:	Greases, Food				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
DeltaGreen LLC	DeltaGreen Concentrate All Purpose and Degreaser	5	62.81	<input type="checkbox"/>	

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Tap Environment	Groap	100	59.57	<input type="checkbox"/>	
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Conclusion:

The supplied product provided more consistent soil removal from both surfaces coated with a kitchen grease mixture when using immersion cleaning and multiple rinsing steps. Both products removed around 60% of the soil from the surfaces using no mechanical agitation or wiping.