

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014  
DateRun: 02/24/2014  
Experimenters: George Liang, Francisco Abreau  
ClientType: Cleaner Manufacturer  
ProjectNumber: Project #1  
Substrates: Ceramics, Plastic, Steel  
PartType: Coupon  
Contaminants: Greases, Food  
Cleaning Methods: Manual Wipe  
Analytical Methods: Gravimetric

Purpose: To evaluate supplied products for all purpose cleaning using manual cleaning

Experimental Procedure: Prew weighed ceramic, painted steel, and plastic coupons were coated with DCC17 soil using a hand held swab and were 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 L30 reinforced wipe was attached to the cleaning sled and soaked with 1 spray of cleaning solutions with a VWR bottle. Each coupon was sprayed 1 time with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 20 cycles (~30 seconds). Efficiency was calculated for each coupon.

Results:

Cleaner	Initial wt	Final wt	% Removed	Average
Chrisal 1%-Ceramic				
	0.9828	0.1454	85.21	
	0.9801	0.2434	75.17	
	0.9923	0.1240	87.50	82.63
Chrisal 1%-Powder coated Alum				
	0.1104	0.0038	96.56	
	0.0896	0.0025	97.21	
	0.1008	0.0068	93.25	95.67
Chrisal 1%-Plastic				
	0.2382	0.0078	96.73	
	0.2235	0.0170	92.39	
	0.2210	0.0197	91.09	93.40
Chrisal 2%-Ceramic				
	0.9214	0.1914	79.23	
	0.9862	0.2499	74.66	
	0.9597	0.1982	79.35	77.75
Chrisal 2%-Powder coated Alum				
	0.1131	0.0112	90.10	
	0.0712	0.0070	90.17	
	0.1271	0.0074	94.18	91.48
Chrisal 2%-Plastic				
	0.1615	0.0128	92.07	
	0.1901	0.0162	91.48	
	0.1779	0.0317	82.18	88.58
Chrisal 3%-Ceramic				
	0.9886	0.1638	83.43	

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	0.9457	0.2148	77.29	
	1.0005	0.1717	82.84	81.19
Chrisal 3%- Powder coated Alum				
	0.2925	0.0135	95.38	
	0.1693	0.0098	94.21	
	0.1994	0.0103	94.83	94.81
Chrisal 3%- Plastic				
	0.1341	0.0131	90.23	
	0.2424	0.0190	92.16	
	0.1064	-0.0036	103.38	95.26
409-Ceramic				
	0.9246	0.1971	78.68	
	0.9119	0.3182	65.11	
	1.0045	0.4049	59.69	67.83
409- Powder coated Alum				
	0.2339	0.0237	89.87	
	0.4105	0.0139	96.61	
	0.1376	0.0106	92.30	92.93
409- Plastic				
	0.2769	0.0186	93.28	
	0.1347	0.0165	87.75	
	0.2261	0.0068	96.99	92.68

Summary:

<b>Substrates:</b>	Ceramics, Plastic, Steel				
<b>Contaminants:</b>	Greases, Food				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
Chrisal USA Inc	Super CMF 240	1	90.57	<input checked="" type="checkbox"/>	
Chrisal USA Inc	Super CMF 240	2	85.93	<input checked="" type="checkbox"/>	
Fisher Scientific	Absolute Ethanol	0	0.00	<input type="checkbox"/>	
Clorox Company	Formula 409 All Purpose Cleaner	100	84.48	<input type="checkbox"/>	

Conclusion:

Each product has shown a very similar high level of cleaning, with Chrisal outperforming the Clorox in every instance. The spread of results for Chrisal at different dilutions shows that there is a minimal difference between the lower concentrations of Chrisal.