CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	02/24/2014
Experimenters:	Loc Nguyen, George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Aluminum, Ceramics, Plastic
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied products for all purpose cleaning using manual cleaning
Experimental Procedure:	Preweighed ceramic, painted steel, and plastic coupons were coated with a thin layer of hydration soil using a bar and were allowed to dry for 1 hour 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	%Ave
Chrisal 1%-Ceramic				
	2.9469	1.8084	38.63	
	2.1383	1.4445	32.45	
	4.3068	1.6878	60.81	43.96
Chrisal 1%-Powder coated Alum				
	2.5807	1.5634	39.42	
	1.6822	1.0656	36.65	
	2.0475	1.3549	33.83	36.63
Chrisal 1%-Plastic				
	1.5882	1.0486	33.98	
	1.9899	1.4764	25.81	
	1.4436	0.9233	36.04	31.94
Chrisal 2%-Ceramic				
	1.7038	0.9723	42.93	
	4.1312	2.2036	46.66	
	3.7168	2.3911	35.67	41.75
Chrisal 2%-Powder coated Alum				
	2.2980	1.3797	39.96	
	2.0357	1.4354	29.49	
	2.3987	1.6064	33.03	34.16
Chrisal 2%-Plastic				
	1.5020	0.7852	47.72	
	1.8002	1.2327	31.52	
	1.9423	1.0942	43.66	40.97
Chrisal 3%-Ceramic				
	2.1404	1.5779	26.28	

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	4.7647	3.0925	35.10	
	1.8504	1.3131	29.04	30.14
Chrisal 3%-Powder coated Alum				
	1.8512	1.1650	37.07	
	2.5682	1.7683	31.15	
	1.6713	1.0200	38.97	35.73
Chrisal 3%-Plastic				
	2.1390	1.4915	30.27	
	1.9543	1.4620	25.19	
	2.1002	1.4993	28.61	28.02
409-Ceramic				
	3.9608	2.9131	26.45	
	3.6683	2.7757	24.33	
	3.1306	2.1659	30.82	27.20
409- Powder coated Alum				
	2.5199	1.6932	32.81	
	1.7987	1.3991	22.22	
	1.3302	0.8757	34.17	29.73
409- Plastic				
	2.4194	2.2092	8.69	
	1.8297	1.4867	18.75	
	1.8898	1.3393	29.13	18.85

Summary:

Substrates:	Aluminum, Ceramics, Plastic				
Contaminants:	Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Chrisal USA Inc	Super CMF 240	1	37.51	☐	
Chrisal USA Inc	Super CMF 240	2	38.96	☐	
Chrisal USA Inc	Super CMF 240	3	0.00	☐	
Clorox Company	Formula 409 All Purpose Cleaner	100	25.26	☐	

Conclusion: Each product has shown a similar level of low performance. All of the dilutions of Chrisal outperformed Clorox 409 by a significant margin.