CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2009
DateRun:	06/01/2009
Experimenters:	Jason Marshall, Junhee Cho, Timothy Weil
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Ceramics, Plastic, Steel
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied aerosol products for manual all purpose cleaning
Experimental Procedure:	Preweighed ceramic, painted steel and plastic coupons were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter 9.2%, Salted Butter 9.2%, Arrowhead Mills stone ground wheat flour 9.2%, Egg Yolk 9.2%, Evaporated milk 13.8%, Distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, Shaws saline solution 2.7%) 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 Reinforced paper towel was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 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.
Results:	Each of the supplied products and industry product were effective in removing the Hucker's Soil with a manual wiping action. The table lists the amount of soil initially added and the amount remaining after cleaning and the product efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
A00166 Ceramic	0.1952	0.0026	98.67
	0.0928	0.0000	100.00
	0.2240	0.0172	92.32
A00166 Painted Steel	0.0943	0.0142	84.94
	0.0963	0.0325	66.25
	0.1284	0.0308	76.01
A00166 Steel	0.1064	0.0103	90.32
	0.0620	0.0053	91.45
	0.0753	0.0047	93.76
SD-20 Ceramic	0.0897	-0.0010	101.11
	0.0558	0.0014	97.49
	0.0831	0.0064	92.30
SD-20 Painted Steel	0.1034	0.0033	96.81
	0.1160	0.0047	95.95
	0.1167	0.0146	87.49
SD-20 Steel	0.0455	0.0020	95.60
	0.1178	0.0036	96.94
	0.1113	0.0124	88.86
Mr. Jinx Ceramic	0.1126	0.0026	97.69
	0.1425	-0.0013	100.91
	0.0762	0.0050	93.44
Mr. Jinx Painted Steel	0.0576	0.0063	89.06
	0.0968	0.0076	92.15
	0.1271	0.0060	95.28
Mr. Jinx Steel	0.1187	0.0033	97.22

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	0.0962	0.0034	96.47
	0.0341	0.0012	96.48
Formula 409 Ceramic	0.1167	-0.0073	106.26
	0.1321	-0.0006	100.45
	0.1817	0.0048	97.36

Summary:

Substrates:	Ceramics, Plastic, Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Amrep Inc	Aspire Heavy Duty Multipurpose Cleaner A00166 Aerosol	100	88.19	☑	Rank = 4
Amrep Inc	Misty All Purpose Cleaner A00170 Aerosol	100	94.73	☑	Rank = 3
Spartan Chemical Company	SD 20 All Purpose Degreaser Aerosol	100	95.41	☑	Rank = 2
Claire Manufacturing	Mr Jinx All Purpose Cleaner Aerosol	100	96.16	☑	Rank = 1
Clorox Company	Formula 409 All Purpose Cleaner	100	77.27	☐	Rank = 5

Conclusion:

Five products removed over 85% of the Hucker’s soil from the three surfaces using manual wiping. The Amrep Aspire product removed just under 90% and was the fourth best cleaner, outperforming the Amrep Misty product.