CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2009

DateRun: 06/01/2009

Experimenters: Jason Marshall, Junhee Cho, Timothy Weil

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To evaluate supplied aerosol products for manual stainless steel cleaning

Experimental Procedure: Preweighed stainless steel 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: The supplied product 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
A00146	0.2005	0.0453	77.41
	0.1939	0.0319	83.55
	0.1507	0.0356	76.38
A00142	0.1504	0.0176	88.30
	0.1907	0.0231	87.89
	0.0989	0.0124	87.46
3M SS Cleaner Polish	0.1275	0.0280	78.04
	0.1027	0.0216	78.97
	0.0824	0.0260	68.45
Spartan Cleaner Polish	0.0926	0.0160	82.72
	0.1525	0.0152	90.03
	0.1733	0.0395	77.21
Stainless Steel Maintainer	0.0937	0.0195	79.19
	0.1387	0.0172	87.60
	0.0901	0.0183	79.69
Wiemanns SS Cleaner/Polish	0.0557	0.0110	80.25
	0.1055	0.0181	82.84
	0.0598	0.0187	68.73

Summary:

Substrates:	Stainless Steel				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Amrep Inc	Stainless Steel Cleaner & Polish A00146 Aerosol	100	79.11	☐	Rank = 4

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Amrep Inc	Misty Painless Stainless A00142 Aerosol	100	87.88	☑	Rank = 1
3M	Stainless Steel Cleaner & Polish Aerosol	100	75.15	☐	Rank = 6
Spartan Chemical Company	Stainless Steel Cleaner Polish Aerosol	100	83.32	☐	Rank = 2
Claire Manufacturing	Stainless Steel Polish & Cleaner Aerosol	100	82.16	☐	Rank = 3
Herbert Stanley Comp	Weiman Stainless Steel Cleaner & Polish Aerosol	100	77.27	☐	Rank = 5

Conclusion: Only one product, Amrep Misty, removed more than 85% of the all purpose soil from stainless steel. Two other products removed more than 85% and the remaining three removed more than 75%. Aspire was the fourth most effective cleaner in the stainless steel polish and cleaning category.