CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	03/29/2010
Experimenters:	Jason Marshall, Junhee Cho
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Textile
PartType:	Coupon
Contaminants:	Inks, Oil, Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Visual
Purpose:	To evaluate supplied equipment for carpet stain removal as compared with water.

Experimental Procedure:

The purpose of this evaluation was to assess effectiveness of spot and stain removal chemicals by rating the removal of specific staining agents.

Two almond white tufted cut pile test carpet measuring 18 inch by 24 inch were stained with eight staining agents. Each staining agent was applied to the test carpet in triplicate, spaced out at 2.5 inches. The staining agent was applied to the surface using a trigger pump spray bottle capable of delivering 2.5 +/- 0.5 ml of stain mixture. The spray was focused within a staining ring measuring 1.5 inches wide by 1.2 inches high.

The eight staining agents included mustard, catsup, coffee, grape juice, black permanent marker (2 1” lines instead of 2.5 ml), dirty motor oil, AATCC synthetic soil and chocolate syrup. These staining agents were used according to the dilution ratios listed in the table below.

Staining Agent Dilution ratio
Mustard 1:2 mustard:water
Catsup 1:3 catsup:water
Hot Coffee 60 deg +/-3C 1 teaspoon coffee to 175 ml water
Purple Grape Juice Full concentration
Black Permanent Marker-Chisel Point N/A
Dirty Motor Oil 1:1 oil:heptane
AATCC Synthetic Soil 0.5 grams/100 ml water
Chocolate Syrup 1:4 chocolate:water

The staining agent mixture was poured into the spray bottle. The nozzle of the bottle was centered inside the staining ring and three pumps of the spray bottle were performed to deliver the 2.5 ml of mixture to the test carpet. The staining ring was left in place until the staining agent was completely soaked into the test carpet. The ring was rinsed in between each staining location. The two completed test carpets were allowed to dry for 24 hours +/- 2 hours before conducting the stain removal procedure.

Following the overnight drying, any excess solid staining agent was removed from the test carpet. The cleaning agent was applied to the surface so that the stain was saturated. The solution was allowed to sit on the stain for 2 minutes. The saturated stain was blotted with a clean dry Kimberly Clark Reinforced wiper towel. Any transfer of the stain/cleaning agent to the towel was noted. Blotting continued until all evidence of liquid transfer was gone. At this point, the cleaning solution was applied to the surface and blotted until the stain was completely removed or three applications of the cleaning solution were performed. The total number of applications was recorded for each stain. The test carpet was allowed to sit for another 24 +/-2 hours to dry before evaluating the stains.

Two lab personnel were used to evaluate the stain removal efficacy which were then averaged together for the final rating. The evaluations were based on the following scale:

Rating Key
5 No Stain
4 Slight Stain
3 Noticeable Stain
2 Considerable Stain
1 Severe Stain

Results:

The PC 220 removed more of the stain than regular water for all but one of the soils (chocolate) using the standardized testing methodology requiring a 2-3 minute soak. Results for both cleaning processes are listed below.

Overall Averages	PC220	Water
Mustard	2.6 Considerable	2.0 Considerable
Catsup	3.5 Noticeable	3.0 Noticeable

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Hot Coffee 60 deg +/-3C	2.9 Considerable	3.0 Noticeable
Purple Grape Juice	2.0 Considerable	2.6 Considerable
Black Permanent Marker	1.4 Severe	1.0 Severe
Dirty Motor Oil	4.0 Slight Stain	3.8 Slight
AATCC Synthetic Soil	2.3 Considerable	2.0 Considerable
Chocolate Syrup	4.0 Slight Stain	2.5 Considerable

Summary:

Substrates:	Textile				
Contaminants:	Inks, Oil, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Next-Gen Supply Group	PC 220 Peroxide Multipurpose Cleaner	0.78	0.00	☑	
Water	Water	100	0.00	☐	

Conclusion: PC 220 was found to be better than water at removing the various stains from a carpet.