

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007
 DateRun: 05/29/2007
 Experimenters: Jason Marshall, Heidi Wilcox, Shweta Bansal, Andrea Cheeseman
 ClientType: General
 ProjectNumber: Project #2
 Substrates: Fiberglass
 PartType: Coupon
 Contaminants: Waxes
 Cleaning Methods: Manual Wipe
 Analytical Methods: Visual

Purpose: To conduct a screening of in-house biobased products for removing floor coating/wax.

Experimental Procedure: A search of the lab's on-line database at www.cleansolutions.org was conducted to identify all products that were considered to contain some level of bio-based materials. From this this, 39 products were selected for screen testing.

Fiberglass coupons were coated with a layer of Johnson Show Place floor wax and allowed to dry for 30 minutes. During the 30 minutes, a Master Appliance Heat gun was used to speed up the drying process. Two subsequent coating layers were applied follow the same drying process. After application of the third coating, the coupons were allowed to sit overnight for continued drying.

Each bio-based product was applied at full strength to a separate coupon using a plastic squeeze bulb. Approximately, 3 ml of product was applied to the contaminated coupon. The product was allowed to sit for 10 minutes. At the end of this period, the coupons were wiped with a paper towel and the surface was observed for any signs of change resulting from the bio-based product. Successful products were then compared to each other to determine which products performed the best.

Results: Several of the products were found to have some effect on the wax coating after soaking for 10 minutes. The first table below lists the products, observations made and the ranking of the most effective products. The second table list the observations for the ineffective products.

Effective Products (1=most efficient)

Rank	Solvent	*Coupon #	Descriptions and Comments
1	**Green Products, LLC: Amazing Biobased Solvent and Stripper	6	Thick, spreads evenly and easily, does not dry well, filmy, removes wax very well, peels wax off, leaves no residual
2	Inland Technologies Inc.: EP 921	27	Very strong chemical odor, spreads evenly and easily, dries fast, cloudy discoloration, sticky at first, but removes wax very well, peels wax off, leaves no residual (cloudiness gone)
3	Finger Lakes Chemical: Resineater	42	Spreads evenly and easily, cloudy discoloration, but removes wax easily, leaves no residual (cloudiness gone)

CLEANING LABORATORY EVALUATION SUMMARY

4	Ecolink: Safe Strip	39	Very watery, does not spread as easy, leaves a thin layer over wax, sticky at first, but removes wax easily, leaves no residual
5	Gemtek: SC-Maxi Solve	16	Very watery, spreads evenly and easily, cloudy discoloration, removes wax easily, leaves no residual
6	Finger Lakes Chemical: Pine Strip	43	Thick, spreads evenly and easily, does not dry well, removes wax easily, some residual
7	Finger Lakes Chemical: Graffiti Remover	9	Strong citrus odor, spreads evenly and easily, slimy, removes wax easily, clumps when removing wax, leaves filmy residual on surface that clears-up within a short period of time (minutes)
8	1st Enviro-safety: Industrial Cleaner/Degreaser	1	Spreads evenly and easily, cloudy discoloration, softened wax to be scraped off with fingernail, some residual

Ineffective Products

Coupon #	Solvent	Descriptions and Comments
2	AG Environmental Products: Canola gold CE110	Some cloudy discoloration, did not remove wax
3	AG Environmental Products: Soyclear 1500	Did not spread well, some cloudy discoloration, did not remove wax
4	AG Environmental Products: Soygold 1000	Thick, did not spread well, tacky, did not remove wax
5	AG Environmental Products: Soygold 1100	Some cloudy discoloration, did not remove wax
6	AG Environmental Products: Soygold 2000	Spreads easily and evenly, some cloudy discoloration, did not remove wax

CLEANING LABORATORY EVALUATION SUMMARY

7	Bio Chem Systems: Bio T Max	Very strong citrus odor, spreads easily and evenly, cloudy discoloration, filmy residual, tacky and sticky, did not remove wax
47	Bi-O-Kleen: Citrus Soy	Spreads easily and evenly, very cloudy discoloration, filmy residual, tacky and sticky, did not remove wax
11	Florida Chemical Company: Citrus Burst 7	Strong citrus/chemical odor, thick, spreads well but not evenly, filmy residual, removes wax if scraped hard, but very sticky and messy, not workable
13	Florida Chemical Company: D-limonene	Very strong citrus odor, thick, spreads well but not evenly, very cloudy discoloration, filmy residual, removes wax if scraped very hard
15	Gemtek Products: EZ Solv	Spreads easily and evenly, completely hardened over wax, cloudy discoloration, filmy residual, removes wax if scraped hard
17	Gemtek Products: SC 1000	Watery, spreads easily and evenly, bubbles on surface, cloudy discoloration, filmy residual, removes wax if scraped hard (residual gone)
18	Gemtek Products: SC-Aircraft and Metal Cleaner	Watery, spreads easily and evenly, bubbles on surface, very cloudy discoloration, filmy residual, does not remove wax
19	Gemtek Products: SC Supersolve	Spreads easily and evenly, some cloudy discoloration, very tacky and sticky, did not remove wax
24	Inland Technologies, Inc: Citra-Safe	Watery, did not spread well, cloudy discoloration, filmy residual, removes wax if scraped very hard
28	Oakite Products: Inproclean 4000T	Strong citrus/pine odor, thick, spreads easily and evenly, some cloudy discoloration, filmy residual, tacky and sticky, removes wax if scraped very hard

CLEANING LABORATORY EVALUATION SUMMARY

29	Soysolv Industrial Products: Soysolv	Did not spread at all, some cloudy discoloration, removes wax if scraped very hard
31	Soysolv Industrial Products: Soysolv II Plus	Oily and watery, spreads easily and evenly, did not dry, some cloudy discoloration, filmy residual, tacky and sticky, does not remove wax
32	Sysco: Soy Cleaner Formula 180D	Spreads easily and somewhat evenly, bubbles on surface, did not dry, cloudy discoloration, filmy residual, removes wax if scraped very hard
35	United Labs International: United 2002 Harvest Gold	Did not spread well, some cloudy discoloration, filmy residual, did not remove wax
44	Finger Lakes: Pinene	Pine odor, spreads easily and evenly, did not dry well, cloudy discoloration, filmy residual, did not remove wax
45	Finger Lakes: 3-D Degreaser	Thick, spreads easily and evenly, very cloudy discoloration, removes wax if scraped very hard
8	Bi-O-Kleen: Citrus Soy Cleaner and Degreaser	Citrus odor, thick, glue-like consistency, spreads easily, very cloudy discoloration, filmy residual, did not dry well, did not remove wax
48	Orison Marketing: Eco Natural Floor Stripper	Thick, spreads easily and evenly, very cloudy discoloration, filmy residual, did not remove wax
55	Globalbiobased Asia: All Purpose 102 Concentration	Very thick, glue-like consistency, bubbles on surface, did not dry well, cloudy discoloration, filmy residual, did not remove wax
57	Globalbiobased Asia: Floor Wax Stripper 101 Concentration	Did not spread well, separates, did not dry well, very filmy residual, tacky and sticky, did not remove wax
*57	Bi-O-Kleen: Soycream Cleaner	Spreads easily and evenly, did not dry well, cloudy discoloration, filmy residual, removes wax and other solvent if scraped
Coupon #	Solvent	Descriptions and Comments

CLEANING LABORATORY EVALUATION SUMMARY

*2	1st EnviroSafety: Organic Cleaner/ Degreaser	Watery, spreads easily and evenly, very cloudy discoloration, filmy residual, did not remove wax and other solvent
*3	Bi-O-Kleen: SL-100	Spreads easily and evenly, some cloudy discoloration, filmy residual, removes wax and other solvent if scraped very hard
*4	EnvirOx LLC: Grout-Safe	Spreads easily and evenly, some cloudy discoloration, filmy residual, removes wax and other solvent if scraped very hard
*5	EnvirOx LLC: H2Orange2	Spreads easily and evenly, some cloudy discoloration, filmy residual, did not remove wax and other solvent
*7	Garden Guys: Degreaser (Organic Products)	Spreads easily and evenly, some cloudy discoloration, filmy residual, tacky and sticky, did not remove wax and other solvent

Summary:

Substrates:	Fiberglass				
Contaminants:	Waxes				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
AG Environmental Products	Canola Gold CE110	100		<input type="checkbox"/>	
AG Environmental Products	Soy Clear 1500	100		<input type="checkbox"/>	
AG Environmental Products	Soy Gold 1000	100		<input type="checkbox"/>	
AG Environmental Products	Soy Gold 1100	100		<input type="checkbox"/>	
AG Environmental Products	Soy Gold 2000	100		<input type="checkbox"/>	
Bio Chem Systems	Bio T Max	100		<input type="checkbox"/>	
Bi-O-Kleen Industries	Citrus Soy Solvent Cleaner & Degreaser	100		<input type="checkbox"/>	
Florida Chemical Company	Citrus Burst 7	100		<input type="checkbox"/>	
Florida Chemical Company	D-Limonene	100		<input type="checkbox"/>	
Gemtek Products	SC EZ Solv Safety Solvent	100		<input type="checkbox"/>	
Gemtek Products	SC 1000 Aqueous Cleaner Concentrate	100		<input type="checkbox"/>	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	100		<input type="checkbox"/>	
Gemtek Products	SC Supersolve Safety Solvent	100		<input type="checkbox"/>	
Inland Technologies Inc	Citrasafe	100		<input type="checkbox"/>	
Oakite Products	Inproclean 4000 T	100		<input type="checkbox"/>	
Soysolv Industrial Products	Soysolv industrial solvent	100		<input type="checkbox"/>	

CLEANING LABORATORY EVALUATION SUMMARY

Soysolv Industrial Products	Soysolv II solvent Plus	100		<input type="checkbox"/>	
Sysco Corporation	Soy Cleaner 180 D	100		<input type="checkbox"/>	
United Laboratories International	United 2002 Harvest Gold	100		<input type="checkbox"/>	
Finger Lakes Chemical	FLSC-31 Pinene All Purpose Cleaner	100		<input type="checkbox"/>	
Finger Lakes Chemical	3 D Degreaser	100		<input type="checkbox"/>	
Bi-O-Kleen Industries	Citrus Soy Solvent Cleaner & Degreaser	100		<input type="checkbox"/>	
Orison Marketing	Eco Natural Floor Stripper	100		<input type="checkbox"/>	
Globalbiobased Asia	All Purpose 102	100		<input type="checkbox"/>	
Globalbiobased Asia	Floor Wax Stripper 101	100		<input type="checkbox"/>	
Bi-O-Kleen Industries	Soy Cream Cleaner	100		<input type="checkbox"/>	
1st Envirosafety Inc. - No Longer Exists	Organic Cleaner/Degreaser - For Comparison Purposes Only	100		<input type="checkbox"/>	
Bi-O-Kleen Industries	Soy Lube- SL 100	100		<input type="checkbox"/>	
EnvirOx LLC	Grout Safe	100		<input type="checkbox"/>	
EnvirOx LLC	H2Orange2	100		<input type="checkbox"/>	
Garden Guys	Organic Products Degreaser	100		<input type="checkbox"/>	
Green Products	aMAIZEing biobased solvent and stripper	100		<input checked="" type="checkbox"/>	
Inland Technologies Inc	EP 921	100		<input checked="" type="checkbox"/>	
Finger Lakes Chemical	FLSC-12 Resineater Sample	100		<input checked="" type="checkbox"/>	
EcoLink	Safe Strip	100		<input checked="" type="checkbox"/>	
Gemtek Products	Safe Care (SC) Maxi Solv	100		<input checked="" type="checkbox"/>	
Finger Lakes Chemical	FLSC-47 Pine Strip	100		<input checked="" type="checkbox"/>	
Twin Rivers Technologies	Graffiti Remover	100		<input checked="" type="checkbox"/>	
Globalbiobased Asia	All Purpose 102	100		<input checked="" type="checkbox"/>	
1st Envirosafety Inc. - No Longer Exists	Ecco Commercial Cleaner - For Comparison Purposes Only	100		<input checked="" type="checkbox"/>	

Conclusion:

The bio-based products that were determined to show signs of effectiveness will be tested under expanded conditions on the current floor coating/wax. Additional bio-based products will be screened when they arrive in the lab.