Released by UL Environment
Date Issued: November 13, 2019
Product ID #: 1000813069-2631488
Test Report #: 1000813069-2631488

V2PSBCM

GREENGUARD CERTIFICATION PROGRAM OUT-OF-SCOPE PROFILE STUDY TEST REPORT						
Product Description	APAGON COLLECTION					
Category	WINDOW TREATMENTS					
SUMMARY		**Environment**	**TVOC**	**Formaldehyde**	**Total Aldehydes**	**CREL/TLV**
	GREENGUARD	Office	✓	✓	✓	✓
	GREENGUARD Gold	Office	✓	✓	✓	✓
		Classroom	✓	✓	✓	✓
	✓ - meets criteria; ✓* - meets within 25%; X - over criteria					

This test data is provided for general informational purposes only. The data indicate the level of emissions from the designated product and how they compare to the emission criteria of the GREENGUARD and GREENGUARD Gold standards. This data does not imply that the product has been qualified to meet the requirements of the GREENGUARD Certification program nor does it imply that the product is or is not certified by the GREENGUARD Certification program. A summary of the allowable emission limits for GREENGUARD Certification and GREENGUARD Gold Certification can be found here.

Customer Information	INDIANA COATED FABRICS DAVID BRETTELL PO BOX 1017 WARSAW IN 46581-1017 UNITED STATES
Laboratory Approval	 Allyson M. McFry Chemistry Laboratory Director

SAMPLE INFORMATION	
Testing Laboratory Location	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
Test Description	The product was received by UL ENVIRONMENT as packaged and shipped by the customer. The package was visually inspected and stored in a controlled environment immediately following sample check-in. Just prior to loading, the product was unpackaged and prepared for the required loading to expose the top surface side only. The sample was placed inside the environmental chamber, and tested according to the specified protocol.
Date Received	October 22, 2019
Test Period	10/25/2019 - 10/26/2019
Area	one-sided area = 0.0832 m^2
Chamber Volume	0.0850 m^3
Product Loading	0.98 m^2/m^3
Test Conditions	1.00 ± 0.05 ACH 50% RH ± 5% RH 23º C ± 1º C

The temperature range specification is 23°C ± 1°. The actual temperature range listed above may vary slightly. If the range is outside this specification, data was reviewed to ensure a negative impact did not occur.

MODELING PREDICTED CONCENTRATION PARAMETERS								
Certification Program	**Environment Basis**	**Product Usage**	**Surface Area (m^2)**	**Room Volume (m^3)**	**ACH (1/hr)**	**Assumed Decay Parameters**		
						k_T	k_F	k_A
GREENGUARD and GREENGUARD Gold Office	CDPH/EHLB/Standard Method	window treatment	1.49	30.6	0.68	0.007	0.005	0.011
GREENGUARD Gold Classroom	CDPH/EHLB/Standard Method	window treatment	4.46	231	0.82	0.007	0.005	0.011

RESULTS				
Analyte	**24 Hour Emission Factor ($\mu g/m^2 \cdot hr$)**	**168 Hour Predicted Concentration**		
		GREENGUARD	**GREENGUARD Gold**	
			Office	**Classroom**
TVOC	449	0.012 mg/m^3	0.012 mg/m^3	0.004 mg/m^3
Formaldehyde	BQL	< 0.001 ppm	< 0.001 ppm	< 0.001 ppm
Total Aldehydes	BQL	< 0.001 ppm	< 0.001 ppm	< 0.001 ppm

IDENTIFIED VOLATILE ORGANIC COMPOUNDS AT 24 ELAPSED EXPOSURE HOURS		
CAS Number	**Compound**	**Emission Factor ($\mu g/m^2 \cdot hr$)**
---	Unresolved hydrocarbons	217
872-50-4	2-Pyrrolidinone, 1-methyl†	114
112-34-5	Ethanol, 2-(2-butoxyethoxy)	38.3
556-67-2	Cyclotetrasiloxane, octamethyl	21.5
104-76-7	1-Hexanol, 2-ethyl†	17.1
98-86-2	Acetophenone (Ethanone, 1-phenyl)*†	12.1
629-59-4	Tetradecane†	9.7
541-02-6	Cyclopentasiloxane, decamethyl	9.4
629-50-5	Tridecane	9.3
112-40-3	Dodecane†	5.7
111-90-0	Ethanol, 2-(2-ethoxyethoxy) (Diethylene glycol monoethyl ether)†	5.7
1000316-84-8	Acetamide, N-(6-acetylaminobenzothiazol-2-yl)-2-(adamantan-1-yl)-*	5.3
58121-31-6	2-Methyl-4-phenylthiolane, 1-oxide*	4.9
1000191-85-4	2,2,6-Trimethyl-1-(3-methylbuta-1,3-dienyl)-7-oxabicyclo[4.1.0]heptan-3-ol*	4.5
344332-17-8	3-Isopropyl-2-phenyl-pent-4-en-2-ol*	4.3
96-76-4	Phenol, 2,4-bis(1,1-dimethylethyl)-	3.5
108511-84-8	2-Acetoxy-1,1,10-trimethyl-6,9-epidioxydecalin*	3.2
1000192-73-0	2,5,5,8a-Tetramethyl-4-methylene-6,7,8,8a-tetrahydro-4H,5H-chromen-4a-yl hydroperoxide*	3.1
1483-60-9	Benzene, 2,4-dimethyl-1-(1-methylpropyl)*	3.1
35727-45-8	Cyclohexanol, 3-ethenyl-3-methyl-2-(1-methylethenyl)-6-(1-me*	3.0
2958-76-1	Naphthalene, decahydro-2-methyl	3.0
1000189-03-6	3-(1,5-Dimethyl-hex-4-enyl)-2,2-dimethyl-cyclopent-3-enol*	2.9

IDENTIFIED VOLATILE ORGANIC COMPOUNDS AT 24 ELAPSED EXPOSURE HOURS		
CAS Number	**Compound**	**Emission Factor (µg/m²•hr)**
52417-50-2	Benzeneacetaldehyde, a,2,5-trimethyl-*	2.9
121841-67-6	2,2,6,7-Tetramethyl-10-oxatricyclo[4.3.1.0(1,6)]decan-5-ol*	2.6
121-44-8	Triethylamine (N,N-Diethylethanamine)†	2.6
55265-34-4	Bicyclohexyl-2,3'-dione*	2.4
55937-94-5	1-Pentanone, 1-(4-methoxyphenyl)-, oxime*	2.3
84820-13-3	Cyclohexene, 6-butyl-1-nitro-*	2.3
108-95-2	Phenol†	2.3
25564-22-1	2-Cyclopenten-1-one, 2-pentyl-*	2.2

*****Indicates NIST/EPA/NIH best library match only based on retention time and mass spectral characteristics.
†Denotes quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

TARGET LIST ALDEHYDES AT 24 ELAPSED EXPOSURE HOURS		
CAS Number	**Compound**	**Emission Factor (µg/m²•hr)**
4170-30-3	2-Butenal	BQL
75-07-0	Acetaldehyde	BQL
100-52-7	Benzaldehyde	BQL
5779-94-2	Benzaldehyde, 2,5-dimethyl	BQL
529-20-4	Benzaldehyde, 2-methyl	BQL
620-23-5 /104-87-0	Benzaldehyde, 3- and/or 4-methyl	BQL
123-72-8	Butanal	BQL
590-86-3	Butanal, 3-methyl	BQL
50-00-0	Formaldehyde	BQL
66-25-1	Hexanal	BQL
110-62-3	Pentanal	BQL
123-38-6	Propanal	BQL

Analyses based on EPA Compendium Method TO-17 and ASTM D 6196 for VOCs by thermal desorption followed by gas chromatography/mass spectrometry (TD/GC/MS), and EPA Method TO-11A and ASTM D 5197 for selected aldehydes by high performance liquid chromatography (HPLC).

BQL denotes below quantifiable level of 0.04 µg based on a standard 18 L air collection volume for TVOC and individual VOCs and 0.1 µg based on a standard 45 L air collection volume for formaldehyde and total aldehydes.

Testing followed UL 2821, “GREENGUARD Certification Program Method for Measuring and Evaluating Chemical Emissions From Building Materials, Finishes and Furnishings Using Dynamic Environmental Chambers” 2013.

This test is accredited and meets the requirements of ISO/IEC 17025 as verified by ANSI National Accreditation Board. Refer to certificate and scope of accreditation AT-1297.