

	GREENGUA	ARD CERTIFICATIO	ON PROGRAM	I PROFILE STU	DY TEST REPORT			
	Product Description	LAPIS BLUE MATT (7MM)						
	Category	FLOORING	LOORING					
		Environment	TVOC	Formaldehyde	Total Aldehydes	CREL/TLV		
SUMMARY	GREENGUARD	Office	$\checkmark$	✓	✓	$\checkmark$		
	GREENGUARD Gold	Office	$\checkmark$	✓	✓	✓		
		Classroom	✓	✓	$\checkmark$	✓		
✓ - meets criteria; ✓* - meets within 25%; X - over by more than 25% of 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	HITIT SERAMIK SANAYI VE TICARET A.S. MUSTAFA KAYA RESITPASA MAHALLESI ESKI BUYUKDERE CAD. WINDOWIST TOWER NO:26 KAT:15/105 MASLAK-SARIYER ISTANBUL 34467 TURKEY
Authorized by	Allyson M. McFry Chemistry Laboratory Director

	SAMPLE INFO	RMATION			
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 only. The sample was placed inside the environmental chamber and tested according to the specified protocol.				
Date Received	April 12, 2023				
Test Period	<b>d</b> April 18, 2023 - April 19, 2023				
Area	Area one-sided area = 0.0367 m <sup>2</sup>				
Environmental Chamber ID and Volume	$1 \text{ Si}_2 - 0.0854 \text{ m}_3$				
Product Loading	0.43 m <sup>2</sup> /m <sup>3</sup>				
Test Conditions	1.00 ± 0.05 ACH         50% RH ± 5% RH         22.3°C - 23.3°C				
***Laboratory Locations	Testing Laboratory	Analytical Laboratory	Technical Reporting Location		
	ULE - Marietta	ULE - Marietta	ULE - Marietta		

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								
Contification Program	Environment Basis Pro	Dreduct Llooge	Surface Area (m²)	Room Volume (m³)	ACH (1/hr)	Assumed Decay Parameters		
Certification Program		Product Usage				k⊤	k⊧	kΑ
GREENGUARD and GREENGUARD Gold Office	CDPH/EHLB/Standard Method	floor	11.1	30.6	0.68	0.003	0.002	0.002
GREENGUARD Gold Classroom	CDPH/EHLB/Standard Method	floor	89.2	231	0.82	0.003	0.002	0.002

RESULTS						
24 Hour 168 Hour Predicted Concen				tration		
Analyte	Emission Factor (µg/m²•hr)	GREENGUARD	GREENGUARD Gold			
		GREENGUARD	Office	Classroom		
TVOC	BQL	< 0.002 mg/m <sup>3</sup>	< 0.002 mg/m <sup>3</sup>	< 0.001 mg/m <sup>3</sup>		
Formaldehyde	BQL	< 0.002 ppm	< 0.002 ppm	< 0.001 ppm		
Total Aldehydes	BQL	< 0.002 ppm	< 0.002 ppm	< 0.001 ppm		

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.

IDENTIFIE	D VOLATILE ORGANIC COMPOUNDS AT 24 ELAPSED EXPOSU	RE HOURS
CAS Number	Compound	Emission Factor (µg/m²•hr)
	none	

Quantifiable level is 0.04  $\mu g$  based on a standard 18 L air collection volume.

\*Indicates NIST/EPA/NIH best library match only based on retention time and mass spectral characteristics.

<sup>†</sup>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				
75-07-0	Acetaldehyde				
100-52-7	Benzaldehyde				
5779-94-2	Benzaldehyde, 2,5-dimethyl				
529-20-4	Benzaldehyde, 2-methyl				
620-23-5/104-87-0	Benzaldehyde, 3- and/or 4-methyl				
123-72-8	Butanal				
590-86-3	Butanal, 3-methyl				
50-00-0	Formaldehyde				
66-25-1	Hexanal				
110-62-3	Pentanal				
123-38-6	Propanal				

Quantifiable level is 0.1  $\mu$ g is based on a standard 45 L air collection volume

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).

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.

	*Accredited Laboratory Locations				
Location	Address				
ULE - Marietta	UL Environment 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA				
ULE - Guangzhou	UL Verification Services (Guangzhou) 1-3F & Room 501, Building 2 (R&D Center A1), No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China				
ULE - Cabiate	UL International Italia S.r.I ATTN: IAQ Laboratory Via Europa, 9, I – 22060 – Cabiate (Como), Italia				
ULE - Vietnam	UL VS (VIET NAM) CO. LTD., Lot C5, Conurbation 2, Street K1, Cat Lai Industrial Zone, Thanh My Loi Ward, District 2, Ho Chi Minh City, Vietnam				
UL - Shimadzu	Shimadzu Techno-Research, Inc. 1, Nishinokyo-Shimoaicho Nakagyo-ku, Kyoto 604-8436 Japan				
KCL	Korea Conformity Laboratories #805, I-Valley, 149 Gongdan-ro Gunpo-si, Gyeonggi-do, 15849 Korea				
Normec	Normec Product Testing N.V. Honderdweg 13, 9320 Wetteren Belgium				

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Compa	ny Name					Mustafa KAYA
		Organize Sanayi Bölgesi 101.caddesi		ii	Job Title	Quality Assurance Manager
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		-,				Mustafa.kaya@hititseramik.com
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