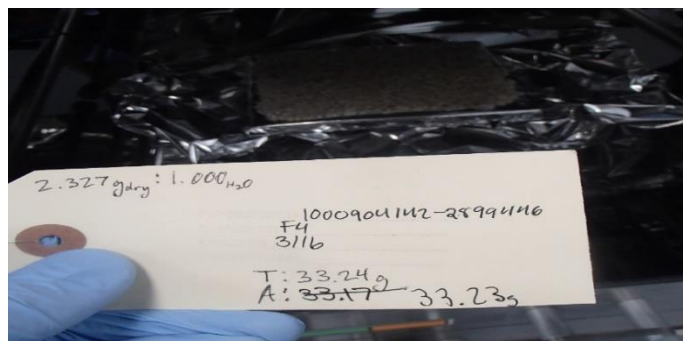




INDOOR AIR QUALITY EVALUATION FOLLOWING THE REQUIREMENTS OF CDPH/EHLB/STANDARD METHOD		
Product Description**	CAFCO 300/ISOLATEK TYPE 300	
Customer Information	ISOLATEK INTERNATIONAL PHILIP MANCUSO 41 FURNACE ST STANHOPE NJ 07874-2624	
Testing Laboratory	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA	
Product Category	Building Products	
Date Received	February 19, 2020	
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. The product was weighed out and water was applied according to the product:water ratio, then the product was applied to a pre-weighed foil wrapped flooring size tray. The total product weight was within 5% of the target weight. The assembly was immediately inserted into the environmental chamber and tested according to the specified protocol.	
Test Date	March 2, 2020 - March 16, 2020	
Product Area Exposed	one-sided area = 0.0361 m²	
Chamber Volume	0.0851 m³	
Product Loading Ratio	0.42 m²/m³	
Test Chamber Conditions	Air change rate: 1.00 ± 0.05 1/h Inlet air flow rate: 0.0851 ± 0.004 m³/h	Temperature: 23.0°C - 23.6°C Relative Humidity: 50% RH ± 5%
Test Method	CDPH - CA Section 01350 <i>Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers</i> Version 1.2.	
Authorized by	 Allyson M. McFry Chemistry Laboratory Director	
*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. **The product tested was CAFCO 300, but the composition of CAFCO 300 and ISOLATEK Type 300 was confirmed by client to be identical. The composition of CAFCO 300 was confirmed by the client to be identical or almost identical to the other products in the series: CAFCO 300 AC, 300 HS, 300 ES, and 300 SB and ISOLATEK Type 300, 300 AC, 300 HS, 300 ES, and 300 SB. 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.		

PHOTOGRAPH OF SAMPLE



RESULTS SUMMARY

Product Description		CAFCO 300/ISOLATEK TYPE 300			
Environment	Product Usage	Product Surface Area	Room Volume	Ventilation Rate (ACH)	Product Compliance?
Classroom	wall	94.6 m ²	231 m ³	0.82	Yes
Office	wall	33.4 m ²	30.6 m ³	0.68	Yes
Residential	N/A	N/A	N/A	N/A	N/A

N/A – not applicable

PROJECT DESCRIPTION

The product was monitored for emissions of TVOC, individual VOCs, formaldehyde and other aldehydes over the 96-hour test period. Measurements were made and predicted exposures were calculated according to the CA Section 01350 protocol. As specified in this protocol, the results at 96 hours, after 10 days of conditioning, were compared to ½ (one-half) the current Chronic Reference Exposure Levels (CRELs), as adopted from the California OEHHA list. All identified VOCs were also compared to the California-EPA OEHHA Proposition 65 list and the California-EPA Air Resource Board list of Toxic Air Contaminants (TACs).

Report Outline:

Table 1	Comparison of Data To Method Requirements
Table 2	Chamber Concentrations and Emission Factors
Table 3	Most Abundant Compounds
Table 4	VOC Predicted Air Concentrations And Regulatory Information
Chain of Custody	Chain of Custody

Download more information regarding UL's technical references and resources, product evaluation methodologies information, quality control program, and environmental chamber evaluations from our website [click here](#) or <https://www.ul.com/offerings/greenguard-certification>

For RSD, Quality Assurance Report or other quality documents, [Request](#) here or contact ULE.

TABLE 1

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/ Office/ Residential)
Acetaldehyde	75-07-0	70	BQL	BQL	BQL	BQL	N/A	Yes
Benzene	71-43-2	1.5	BQL	BQL	BQL	BQL	N/A	Yes
Carbon disulfide*	75-15-0	400	BQL	BQL	BQL	BQL	N/A	Yes
Carbon tetrachloride*	56-23-5	20	BQL	BQL	BQL	BQL	N/A	Yes
Chlorobenzene	108-90-7	500	BQL	BQL	BQL	BQL	N/A	Yes
Chloroform*	67-66-3	150	BQL	BQL	BQL	BQL	N/A	Yes
Dichlorobenzene (1,4-)	106-46-7	400	BQL	BQL	BQL	BQL	N/A	Yes
Dichloroethylene (1,1)*	75-35-4	35	BQL	BQL	BQL	BQL	N/A	Yes
Dimethylformamide (N,N-)*	68-12-2	40	BQL	BQL	BQL	BQL	N/A	Yes
Dioxane (1,4-)	123-91-1	1,500	BQL	BQL	BQL	BQL	N/A	Yes
Epichlorohydrin	106-89-8	1.5	BQL	BQL	BQL	BQL	N/A	Yes
Ethylbenzene	100-41-4	1,000	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol	107-21-1	200	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monoethyl ether acetate*	111-15-9	150	BQL	BQL	BQL	BQL	N/A	Yes

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/ Office/ Residential)
Ethylene glycol monoethyl ether*	110-80-5	35	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monomethyl ether acetate*	110-49-6	45	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monomethyl ether*	109-86-4	30	BQL	BQL	BQL	BQL	N/A	Yes
Formaldehyde	50-00-0	9.0***	BQL	BQL	BQL	BQL	N/A	Yes
Hexane (n-)	110-54-3	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Isophorone*	78-59-1	1,000	BQL	BQL	BQL	BQL	N/A	Yes
Isopropanol	67-63-0	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Methyl chloroform*	71-55-6	500	BQL	BQL	BQL	BQL	N/A	Yes
Methyl t-butyl ether	1634-04-4	4,000	BQL	BQL	BQL	BQL	N/A	Yes
Methylene chloride*	75-09-2	200	BQL	BQL	BQL	BQL	N/A	Yes
Naphthalene	91-20-3	4.5	BQL	BQL	BQL	BQL	N/A	Yes
Phenol	108-95-2	100	BQL	BQL	BQL	BQL	N/A	Yes
Propylene glycol monomethyl ether*	107-98-2	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Styrene	100-42-5	450	BQL	BQL	BQL	BQL	N/A	Yes
Tetrachloroethylene (perchloroethylene)	127-18-4	17.5	BQL	BQL	BQL	BQL	N/A	Yes
Toluene	108-88-3	150	BQL	BQL	BQL	BQL	N/A	Yes
Trichloroethylene	79-01-6	300	BQL	BQL	BQL	BQL	N/A	Yes

Date Issued: March 25, 2020
Product ID #: 1000904142-2899446
Refer to ULE Report: 1000904142-2899446R1
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CDPHR2
Supersedes ULE Report: 1000904142-2899446

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	$\frac{1}{2}$ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor ^{††} (µg/m²·hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets $\frac{1}{2}$ CREL? (Classroom/Office/Residential)
Vinyl acetate	108-05-4	100	BQL	BQL	BQL	BQL	N/A	Yes
Xylenes (m-, o-, p-)	1330-20-7	350	BQL	BQL	BQL	BQL	N/A	Yes

BQL denotes below quantifiable level of 0.04 μg for individual VOCs, with the exceptions benzene and epichlorohydrin which have a QL of 0.02 μg , based on a standard 18 L air collection volume.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_c), the chamber volume (V_c), and the product area exposed in the chamber (A_c) as: $EF = (CC \cdot V_c \cdot N_c) / A_c$.

^{**}The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_b), the building room volume (V_b), and the product area exposed in the building room (A_b) as: $BC = (EF \cdot A_b) / (V_b \cdot N_b)$. For more information on Predicted Concentration modeling parameters, [click here](#).

^{***}Guidance value per CA Standard Method
N/A – not applicable

Date Issued: March 25, 2020
 Product ID #: 1000904142-2899446
 Refer to ULE Report: 1000904142-2899446R1
 ©2020 UL
 CDPHR2
Supersedes ULE Report: 1000904142-2899446

TABLE 2

Product Description		CAFCO 300/ISOLATEK TYPE 300
CHAMBER CONCENTRATIONS AND EMISSION FACTORS FOR TVOC AND FORMALDEHYDE AT 24, 48, AND 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING		
Elapsed Exposure Hour After 10 Days Conditioning	Chamber Concentration (µg/m³)	Emission Factor^{††} (µg/m²•hr)
TVOC[†]		
24	BQL	BQL
48	BQL	BQL
96	BQL	BQL
Formaldehyde[‡]		
24	BQL	BQL
48	BQL	BQL
96	BQL	BQL

BQL denotes below quantifiable level of 2 µg/m³.

Exposure hours are nominal (± 1 hour).

[†]Defined as the sum of those VOCs that elute between the retention times of n-hexane (C₆) and n-hexadecane (C₁₆) on a non-polar capillary GC column quantified based on a toluene response factor.

[‡]Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC \cdot V_C \cdot N_C) / A_C$.

TABLE 3

Product Description		CAFCO 300/ISOLATEK TYPE 300				
TEN MOST ABUNDANT IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS (VOCs) AND/OR ALDEHYDES AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING						
CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Calculated Predicted Exposure Concentration** (µg/m³)		
				Classroom	Office	Residential
---	TVOC‡‡	---	---	---	---	N/A

Exposure hours are nominal (± 1 hour).

VOC data obtained by scanning GC/MS; identification of compound made by retention time and mass spectral characteristics.

[†]Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

^{*}Identification based on NIST mass spectral database only.

[‡]Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC \cdot V_C \cdot N_C) / A_C$.

^{‡‡}Defined as the sum of those VOCs that elute between the retention times of n-hexane (C₆) and n-hexadecane (C₁₆) on a non-polar capillary GC column quantified based on a toluene response factor.

^{**}The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_B), the building room volume (V_B), and the product area exposed in the building room (A_B) as: $BC = (EF \cdot A_B) / (V_B \cdot N_B)$. For more information on Predicted Concentration modeling parameters, [click here](#).

N/A – not applicable

TABLE 4

Product Description		CAFCO 300/ISOLATEK TYPE 300							
VOC PREDICTED AIR CONCENTRATIONS AND REGULATORY INFORMATION AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING									
CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Predicted Exposure Concentration** (µg/m³)			✓ Indicates Presence On List		
							CA PROP 65	CA AIR TOXIC	CREL
				Classroom	Office	Residential			
---	none	---	---	---	---	N/A	---	---	---

[†]Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

[‡]Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_c), the chamber volume (V_c), and the product area exposed in the chamber (A_c) as:
 $EF = (CC \cdot V_c \cdot N_c) / A_c$

^{**}The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_b), the building room volume (V_b), and the product area exposed in the building room (A_b) as: $BC = (EF \cdot A_b) / (V_b \cdot N_b)$. For more information on Predicted Concentration modeling parameters, [click here](#).

CAL Prop. 65: California Health and Welfare Agency, Proposition 65 Chemicals

1 = known to cause cancer

2 = known to cause reproductive toxicity

CAL Toxic Air Contaminant:

I) Substances identified as Toxic Air Contaminants, known to be emitted in California, with a full set of health values reviewed by the Scientific Review Panel.

IIA) Substances identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.

IIB) Substances NOT identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.

III) Substances known to be emitted in California, and are NOMINATED for development of health values or additional health values.

IVA) Substance identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.

IVB) Substance NOT identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.

V) Substance identified as Toxic Air Contaminants, and NOT KNOWN TO BE EMITTED from stationary source facilities in California based on information from the AB 2588 Air Toxic "Hot Spots" Program and the California Toxic Release Inventory.

VI) Substances identified as Toxic Air Contaminants, NOT KNOWN TO BE EMITTED from stationary source facilities in California, and are active ingredients in pesticides in California.

Chronic REL: California Office of Environmental Health Hazard Assessment (OEHHA), Chronic Reference Exposure Levels

✓ = Found in Listing

N/A – not applicable

Product Description	CAFCO 300/ISOLATEK TYPE 300
CHAIN OF CUSTODY	

INTERNAL Use Only

Project #	1000904142		
Product #	2899446		
Order #	13117409		
Task Line	1.1	UL BU	
1 of 1			

2899446



2899446

Description
CAFCO 300/ISOLATEK TYPE 300

Customer: ISOLATEK INTERNATIONAL
Aurora Project No.: 1000904142
Order No.: 13117409
Received Date: 2020-FEB-20 04:47:06 PM Oracle Project No.: 4789245226

2 of 3

CUTMCA044

100029736

☐ **Rush Request – Subject to upcharge.** Customer must confirm with UL prior to submitting product.

GREENGUARD Test Information			
Test Type	☐ Certification Test • Annual/Initial Year _____ ☐ Quarterly Test • Year _____ Quarter _____		☐ Out-of-Scope Test ☐ Profile Study Test
Service Line	☐ GREENGUARD ☐ GREENGUARD GOLD ☒ Other <u>UL GREENGUARD V1.2 TESTING</u>		
Test Group			
Product Category	Building Products	Subcategory	
Application	☒ Floor/Ceiling ☐ Panel ☐ Wall ☐ Work Surface ☐ Other: _____		
Wet Products Only	Coverage Rate	Density	Specific Gravity

Product and Company Information			
Product Description	CAFCO 300 ISOLATEK TYPE 300		
Manufacture ID#	19313-51		
Company Name	ISOLATEK INTERNATIONAL	Date Manufactured	mm/dd/yyyy 11/09/2019
Address	41 FURNACE STREET	Contact Name	DAN EHEHALT
	STANDHOPE, NJ 07874	Job Title	TECHNICAL SERVICE / PRODUCT MANAGER
		Contact Phone	973-347-1200 EXT 275
		Contact Email	DEHEHALT@ISOLATEK.COM

Collection Information			
Collector Name	ANGELICA SICKEL	Date Collected	mm/dd/yyyy 11/09/2019 01/17/2020
Collector Phone	973-347-1200 EXT 259	Time Collected	10:00 AM
Collector Signature	Angelica Sickel	Collection Location	STANDHOPE, NJ

Shipping Information			
Carrier	UPS	Date Shipped	mm/dd/yyyy 02/17/2020
Shipper Name	Angelica Sickel	Time Shipped	11:15am
Shipper Phone	973-347-1200 EXT 259	Air Bill #	12576E0003 90992932
Shipper Signature	Angelica Sickel		

Sample Submitted to			
☒ UL Environment (Marietta) 2211 Newmarket Pkwy Suite 106 Marietta, GA 30067, USA	☐ UL Verification Services (Guangzhou) Building A1, 3F, Nansha Science and Technology Innovation Ctr. No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China	☐ UL International Italia S.r.l ATTN: IAQ Laboratory Via Europa, 9 I - 22060 - Cabiato (Como), Italia	☐ Other

Post Testing Sample Disposition	
(Sample will be disposed of 30 days after report is issued if information below is not provided)	
Return Shipping Co.	Customer Shipping Acct #

Internal Use Only – Receiving Information			
Receiver Name	Condition Upon Arrival	Receiver Signature	Receive Date
	☒ Acceptable ☐ Not Acceptable		2/19/20
Condition Notes		Receive Time	11:05 AM
Completed By	Based On		Date



VOC EMISSION RESULTS COMPARISON TO STANDARD

Standard referenced: CDPH/EHLB/Standard Method V1.2 (January 2017) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" (aka CA Section 01350).

PRODUCT SAMPLE INFORMATION

Manufacturer	ISOLATEK INTERNATIONAL
Product Description	CAFCO 300/ISOLATEK TYPE 300
Product Type	Building Products
UL Sample Identification	1000904142-2899446
Manufactured Date	November 9, 2019
Test Completed Date	March 16, 2020
UL Report #	1000904142-2899446
Report Date	March 23, 2020

TEST RESULTS COMPARISON TO STANDARD CRITERIA

Environment	Classroom		Office		Residential	
Surface Area	94.6 m ²		33.4 m ²		N/A	
	Criterion	Meets?	Criterion	Meets?	Criterion	Meets?
Individual VOC	≤ ½ CREL	Yes	≤ ½ CREL	Yes	≤ ½ CREL	N/A
Formaldehyde	≤ 9.0 µg/m ³	Yes	≤ 9.0 µg/m ³	Yes	≤ 9.0 µg/m ³	N/A

Environment	Classroom	Office	Residential
Surface Area	94.6 m ²	33.4 m ²	N/A
TVOC	0.5 mg/m ³ or less	0.5 mg/m ³ or less	N/A

N/A – not applicable

TVOC comparison is based on LEED BD+C: New Construction v4 (LEED v4), Indoor environmental quality (EQ) category/Low-emitting materials credit/Emissions and content requirements/General emissions evaluation.

<http://www.usgbc.org/node/2614095?return=/credits/new-construction/v4/indoor-environmental-quality>

Authorized by	 Allyson McFry Chemistry Laboratory Manager
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Complete testing and data results are presented in UL Environment Report

Disclaimer: This Comparison affirms that: 1) the product sample was tested according to the referenced standard; 2) the measured VOC emissions were evaluated for the defined exposure scenario(s); and 3) if so indicated above that the results meet the criteria of the referenced standard(s). UL Environment did not select the samples, determine if the samples were representative of production samples, witness the production of test samples, or were we provided with information relative to the formulation or identification of component materials used in the test samples. The test results apply only to the actual samples tested. The issuance of this Comparison in no way implies Listing, Classification or Recognition by UL and does not authorize the use of UL Listing, Classification or Recognition Marks or any other reference to UL on the product or system. UL Environment authorizes the above named company to reproduce this Comparison provided it is reproduced in its entirety. The name, brand or marks of UL cannot be used in any packaging, advertising, promotion or marketing relating to the data in this Comparison, without UL's prior written permission. UL, its subsidiaries, employees and agents shall not be responsible to anyone for the use or nonuse of the information contained in this Comparison, and shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use of, or inability to use, the information contained in this Comparison.