




FIELD SAMPLING TEST REPORT	
<b>Customer Information</b>	LST.FAI.HBDCResults@ul.com UL Verification Services, Inc. 3251 Old Lee Highway, Suite 100 Fairfax, VA 22030 USA
<b>HB Project Number</b>	2009049NY
<b>Date Received</b>	October 13, 2020
<b>Testing Laboratory Location</b>	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
<b>Method</b>	USEPA Compendium Method TO-17 ; ASTM 6196
<b>Authorized by</b>	 Allyson M. McFry Chemistry Laboratory Director
<p>Sampling: Reported data were obtained from samples and sampling information as provided by the on-site investigator. These data and general information are provided to assist the investigator in an overall IAQ assessment. Interpretation of data is left to the client or persons who conducted the field work.</p> <p>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.</p> <p>This report shall not be reproduced, except in full, without permission from UL. Results contained within this report only apply to the actual product tested under the testing conditions documented in this report.</p>	

Date Issued: November 9, 2020  
Product #: 1001053392-3387943  
Report #: 1001053392-3387943R1  
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**Supersedes Report #: 1001053392-3387943**

UL ID:	SV1TFD
Sample Date:	October 9, 2020
Volume (L):	17.6

## CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		Burn_05_BR_04 Pre	
Total Volatile Organic Compounds		1,140 µg/m³	
CAS Number	Compound	Concentration	
		µg/m³	ppb
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	213	24.1
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	185	20.9
98-56-6	Benzene, 1-chloro-4-(trifluoromethyl)-*	147	19.9
541-02-6	Cyclopentasiloxane, decamethyl	107	7.1
66-25-1	Hexanal	31.5	7.7
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	28.2	9.6
64-19-7	Acetic acid	26.9	10.9
1120-21-4	Undecane	20.0	3.1
104-76-7	1-Hexanol, 2-ethyl	18.8	3.5
5877-42-9	1-Octyn-3-ol, 4-ethyl*	18.6	2.9
110-62-3	Pentanal	18.1	5.1
142-96-1	n-Butyl ether	17.4	3.3
112-40-3	Dodecane†	15.4	2.2
124-19-6	Nonyl aldehyde (Nonanal) †	14.5	2.5
91-20-3	Naphthalene†	13.9	2.7
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	11.9	2.1
22410-74-8	2,6-Octadien-1-ol, 2,7-dimethyl*	11.7	1.8
1330-20-7	Xylenes (Total) †	10.9	2.5
71-36-3	1-Butanol (N-Butyl alcohol)	10.7	3.5
10486-19-8	Tridecanal*	10.5	1.3
124-13-0	Octanal†	10.5	2.0
111-76-2	Ethanol, 2-butoxy	9.9	2.1
112-41-4	1-Dodecene	9.9	1.4
13287-21-3	Tridecane, 6-methyl*	9.1	1.1
79-20-9	Acetate, methyl (Acetic acid, methyl ester)	9.1	3.0
75039-84-8	trans-2-Undecen-1-ol*	9.1	1.3
98-01-1	Furfural (2-Furaldehyde)	8.6	2.2
108-88-3	Toluene (Methylbenzene)	8.2	2.2
71-41-0	1-Pentanol (N-Pentyl alcohol)	7.8	2.2
17301-23-4	Undecane, 2,6-dimethyl	6.7	0.9
100-42-5	Styrene†	6.5	1.5
96-08-2	7-Oxabicyclo[4.1.0]heptane, 1-methyl-4-(2-methyloxiranyl)-*	6.1	0.9
108-10-1	2-Pentanone, 4-methyl (Methyl isobutyl ketone, MIBK)	5.8	1.4

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Volume (L):	17.6

CAS Number	Compound	Concentration	
		µg/m³	ppb
96-29-7	2-Butanone, oxime*	5.7	1.6
1000162-32-0	1-Heptene, 1,3-diphenyl-1-(trimethylsilyloxy)-*	5.3	0.4
20324-32-7	2-Propanol, 1-(2-methoxy-1-methylethoxy)	5.2	0.9
54411-00-6	Cyclohexane, 1-methyl-4-(1-methylbutyl)-*	5.1	0.7
112-54-9	Dodecanal*	5.0	0.7
6975-98-0	Decane, 2-methyl	4.8	0.8
13150-81-7	Decane, 2,6-dimethyl	4.7	0.7
100-52-7	Benzaldehyde	4.6	1.1
4926-90-3	Cyclohexane, 1-ethyl-1-methyl*	4.6	0.9
1000142-34-6	2,3-Dioxabicyclo[2.2.1]heptane, 1-methyl-*	4.5	1.0
123-86-4	Acetate, butyl	4.4	0.9
71-43-2	Benzene†	4.4	1.4
7045-71-8	Undecane, 2-methyl	4.3	0.6
1000372-72-3	(Z)-Dec-4-en-1-yl 2-methylbutanoate*	4.2	0.4
54411-01-7	Cyclohexane, 1-methyl-2-pentyl*	4.1	0.6
1686-15-3	trans-Pinocarvyl acetate*	4.0	0.5
57412-35-8	trans-Verbenyl isovalerate*	3.6	0.4
22607-19-8	1,2-Ethanediol, 1-(2-furyl)-2-phenyl-*	3.6	0.4
95-13-6	Indene*	3.6	0.8
100-44-7	Benzyl chloride (Benzene, (Chloromethyl))*	3.5	0.7
142-62-1	Hexanoic acid	3.3	0.7
25016-11-9	Pyrazole-4-carboxaldehyde, 1-methyl-*	3.3	0.7
540-97-6	Cyclohexasiloxane, dodecamethyl	3.3	0.2
645-10-3	Cyclodecane, 1,7-dimethyl-4-(1-methylethyl)-*	3.2	0.4
92-52-4	1,1'-Biphenyl*	3.1	0.5
13475-82-6	Heptane, 2,2,4,6,6-pentamethyl*	3.1	0.4
818-72-4	1-Octyn-3-ol	3.1	0.6
616-25-1	1-Penten-3-ol*	3.1	0.9
3728-57-2	Cyclopentane, 1-methyl-2-propyl*	2.6	0.5
5458-61-7	Octanoic acid, 2-butyl ester*	2.6	0.3
5077-67-8	1-Hydroxy-2-butanone*	2.6	0.7
18829-55-5	2-Heptenal, (E)	2.5	0.5
36947-68-9	2-Isopropylimidazole*	2.4	0.5
61142-20-9	Cyclohexane, (4-methylpentyl)*	2.4	0.4
2404-44-6	Oxirane, octyl*	2.4	0.4
628-61-5	Octane, 2-chloro*	2.3	0.4
112-52-7	Dodecane, 1-chloro*	2.3	0.3
100-41-4	Benzene, ethyl†	2.2	0.5
208-96-8	Acenaphthylene*	2.2	0.4
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	2.2	0.5
1002-43-3	Undecane, 3-methyl	2.2	0.3
79-09-4	Propanoic acid	2.2	0.7
109-67-1	1-Pentene	2.1	0.7
5143-30-6	2-Propenoic acid, 4-methylpentyl ester*	2.1	0.3

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UL ID:	SV1TFDF
Sample Date:	October 9, 2020
Volume (L):	18.0

## CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

<b>Sample Location/Description</b>		Burn_05_BR_04_Field Blank	
<b>Total Volatile Organic Compounds</b>		BQL	
CAS Number	Compound	Concentration	
		µg/m³	ppb
287-92-3	Cyclopentane	4.5	1.6

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UL ID:	SV2TFD
Sample Date:	October 9, 2020
Volume (L):	17.4

## CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		Burn_05_BR_04_Post	
Total Volatile Organic Compounds		1,360 µg/m³	
CAS Number	Compound	Concentration	
		µg/m³	ppb
64-19-7	Acetic acid	96.8	39.4
51326-51-3	1-Butanol, 4-[(tetrahydro-2H-pyran-2-yl)oxy]-*	94.2	13.2
107-21-1	1,2-Ethanediol (Ethylene glycol) †	83.5	32.9
100-42-5	Styrene†	76.3	17.9
91-20-3	Naphthalene†	58.3	11.1
71-43-2	Benzene†	58.3	18.3
90-05-1	Phenol, 2-methoxy*	48.5	9.6
108-95-2	Phenol†	43.1	11.2
930-27-8	Furan, 3-methyl*	40.8	12.2
497-23-4	2(5H)-Furanone*	33.1	9.6
98-00-0	2-Furanmethanol*	31.3	7.8
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	30.9	7.5
116-09-6	2-Propanone, 1-hydroxy	30.8	10.2
42781-12-4	2-Propanone, 1-(1-methylethoxy)-*	30.5	6.4
93-51-6	Phenol, 2-methoxy-4-methyl*	28.5	5.0
98-01-1	Furfural (2-Furaldehyde)	28.5	7.2
108-88-3	Toluene (Methylbenzene)	27.7	7.4
627-08-7	Propane, 1-(1-methylethoxy)*	26.3	6.3
123-91-1	1,4-Dioxane†	23.8	6.6
78-97-7	Propanenitrile, 2-hydroxy-*	23.6	8.1
108-39-4	Phenol, 3-methyl*	20.9	4.7
4401-11-0	Ethanone, 1-oxiranyl-*	20.5	5.8
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	20.4	6.9
765-70-8	1,2-Cyclopentanedione, 3-methyl*	19.4	4.2
2224-15-9	Ethylene glycol diglycidyl ether*	18.8	2.6
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	17.4	2.0
5077-67-8	1-Hydroxy-2-butanone*	15.0	4.2
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	14.0	2.8
100-47-0	Benzonitrile	13.0	3.1
100-52-7	Benzaldehyde	12.7	2.9
625-38-7	3-Butenoic acid*	12.3	3.5
87143-58-6	3,5-Methanocyclopentapyrazole, 3,3a,4,5,6,6a-hexahydro-3a,4,4-trimethyl-*	11.7	1.7
95-13-6	Indene*	11.7	2.5

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Volume (L):	17.4

CAS Number	Compound	Concentration	
		µg/m³	ppb
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	10.9	1.2
19549-87-2	1-Heptene, 2,4-dimethyl*	10.6	2.0
2785-89-9	Phenol, 4-ethyl-2-methoxy*	10.4	1.7
208-96-8	Acenaphthylene*	10.3	1.6
141-32-2	Butyl acrylate (2-Propenoic Acid, butyl ester)	10.1	1.9
875-59-2	4-Hydroxy-2-methylacetophenone*	10.0	1.6
92-52-4	1,1'-Biphenyl*	9.9	1.6
21835-01-8	2-Cyclopenten-1-one, 3-ethyl-2-hydroxy-*	9.9	1.9
98-83-9	a-Methylstyrene (iso-Propenylbenzene; (1-Methylethenyl)benzene)	9.9	2.0
541-05-9	Cyclotrisiloxane, hexamethyl	9.4	1.0
6704-19-4	1-Propanone, 1-cyclopropyl-*	9.3	2.3
696-71-9	Cyclooctyl alcohol*	9.1	1.7
95-48-7	Phenol, 2-methyl*	9.0	2.0
109-97-7	Pyrrole*	8.5	3.1
592-20-1	2-Propanone, 1-(acetyloxy)-*	8.2	1.7
1330-20-7	Xylenes (Total) †	8.1	1.9
541-02-6	Cyclopentasiloxane, decamethyl	8.0	0.5
15176-21-3	1,4-Dioxane, 2,5-dimethyl*	7.8	1.7
620-02-0	2-Furancarboxaldehyde, 5-methyl*	7.8	1.7
111-76-2	Ethanol, 2-butoxy	7.6	1.6
105-67-9	Phenol, 2,4-dimethyl	7.5	1.5
579-07-7	1,2-Propanedione, 1-phenyl	7.4	1.2
100-41-4	Benzene, ethyl	7.3	1.7
34887-14-4	Pentane, 2,2-dichloro-*	7.3	1.3
79-10-7	2-Propenoic acid (Acrylic acid)	6.9	2.3
5392-57-4	6-Methylheptane-1,6-diol*	6.9	1.1
90-12-0	Naphthalene, 1-methyl	6.8	1.2
1000309-57-5	Oxalic acid, 2-isopropylphenyl pentadecyl ester*	6.2	0.4
343855-44-7	o-Menthan-8-ol*	6.2	1.0
565-60-6	2-Pentanol, 3-methyl*	5.9	1.4
10401-11-3	3-Hydroxyphenylacetylene*	5.8	1.2
6118-50-9	Propanoic acid, 2-nitro-, methyl ester*	5.8	1.1
107-87-9	2-Pentanone*	5.8	1.6
121-33-5	Vanillin (Benzaldehyde, 4-hydroxy-3-methoxy-)*	5.7	0.9
142-62-1	Hexanoic acid	5.4	1.1
1000192-98-8	5-Methyl-4,5-dihydroisoxazole-5-carboxylic acid, methyl ester*	5.4	0.9
1121-05-7	2-Cyclopenten-1-one, 2,3-dimethyl-*	5.3	1.2
109-67-1	1-Pentene	5.2	1.8
33933-81-2	4-Octanol, 7-methyl-, acetate*	5.1	0.7
1193-11-9	1,3-Dioxolane, 2,2,4-trimethyl*	5.1	1.1
91-57-6	Naphthalene, 2-methyl	5.0	0.9
110-86-1	Pyridine	5.0	1.5
1000210-02-4	3-Phenylhex-5-en-3-ol*	4.9	0.7

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Volume (L):	17.4

CAS Number	Compound	Concentration	
		µg/m³	ppb
1000342-31-9	2-Hexanone oxime*	4.8	1.0
5723-89-7	Benzenemethanol, .alpha.-2-cyclohexen-1-yl-*	4.8	0.6
7583-53-1	1-Methyl-3-piperidinemethanol*	4.6	0.9
1000406-10-0	2-Heptenoic acid, pentadecyl ester*	4.5	0.3
74055-14-4	1,2,2,3-Tetramethylcyclopent-3-enol*	4.5	0.8
79-09-4	Propanoic acid	4.4	1.5
591-11-7	2(5H)-Furanone, 5-methyl-*	4.3	1.1
98-56-6	Benzene, 1-chloro-4-(trifluoromethyl)-*	4.2	0.6
5877-42-9	1-Octyn-3-ol, 4-ethyl*	4.2	0.7
4170-30-3	2-Butenal	4.1	1.4
1120-73-6	2-Cyclopenten-1-one, 2-methyl*	3.9	1.0
3102-33-8	3-Penten-2-one, (E)-*	3.9	1.1
611-13-2	Methyl 2-furoate*	3.9	0.8
53783-89-4	Hexanenitrile, 3-methyl*	3.8	0.8
765-43-5	Ethanone, 1-cyclopropyl*	3.6	1.1
637-50-3	Benzene, 1-propenyl-*	3.4	0.7
2916-31-6	1,3-Dioxolane, 2,2-dimethyl-*	3.3	0.8
4794-05-2	Benzene, 2,5-cyclohexadien-1-yl-*	3.2	0.5
119-65-3	Isoquinoline*	3.2	0.6
110-13-4	2,5-Hexanedione*	3.2	0.7
1000293-37-6	5-Chloropentanoic acid, 1-(cyclopentyl)ethyl ester*	3.2	0.3
3008-40-0	1,2-Cyclopentanedione*	2.9	0.7
123-62-6	Propanoic acid, anhydride*	2.9	0.5
79-31-2	Propanoic acid, 2-methyl*	2.8	0.8
53366-38-4	Cyclopentane, (2-methylbutyl)*	2.8	0.5
22287-11-2	3-Penten-2-one, 3-ethyl-4-methyl-*	2.7	0.5
67-64-1	Acetone	2.6	1.1
83-33-0	1H-Inden-1-one, 2,3-dihydro-*	2.6	0.5
1000129-98-0	2,3-Anhydro-d-mannosan*	2.5	0.4
71-23-8	1-Propanol (Propyl alcohol)	2.4	1.0
40771-26-4	1,5-Dihydroxy-1,2,3,4-tetrahydronaphthalene*	2.4	0.4
826-65-3	4,7-Methano-1H-indene-1,8-dione, 3a,4,7,7a-tetrahydro-*	2.3	0.9
827-54-3	Naphthalene, 2-vinyl	2.3	0.4
4359-46-0	1,3-Dioxolane, 2-ethyl-4-methyl*	2.3	0.5
34780-45-5	Cyclohexane, 1-ethenyl-2-methyl-, trans-*	2.2	0.4
109-08-0	Pyrazine, methyl*	2.2	0.6
13547-06-3	Cyclohexene, 1-chloro-4-(1-chloroethenyl)	2.1	0.3
91337-07-4	2-Isopropyl-5-methyl-1-heptanol*	2.1	0.3
4949-44-4	Ethyl propionylacetate*	2.1	0.3
259-79-0	Biphenylene*	2.0	0.3
6975-92-4	1-Hexene, 2,5-dimethyl*	2.0	0.4

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Individual compounds and TVOC (total volatile organic compounds) are calibrated relative to toluene.

Values below 2.0 µg/m<sup>3</sup> are for information purposes only. Chemical was detected, but below the quantifiable level of 0.04 µg based on a standard of 18 L air collection volume.

<sup>†</sup>Denotes quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

UL Environment's quality assurance program monitors blank sorbent media to ensure that the residual background does not exceed UL Environment's quality objective of ≤ 36 ng of total VOC.

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Project # 2009049NY

1001053392 - 3387943



## ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY

Company: ULVS (Healthy Buildings)	Contact: CARESULTS@UL.COM	Project/P.O./Job Number: 2009049NY
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030	Phone: 571.655.7919 Fax: 703.323.4440	Sample Date: 09OCT2020 Investigator: SAM.HORNER
Please check the appropriate fields; Use separate COC for each sample method.	VOLATILE ORGANICS: IVOC SCAN: <input type="checkbox"/> TOP 20 IVOC <input type="checkbox"/> TVOC ONLY <input type="checkbox"/> OTHER <input type="checkbox"/> B.T.E.X.	
	ALDEHYDE SCAN: <input type="checkbox"/> FORMALDEHYDE ONLY <input type="checkbox"/> ANALYSIS: LEED V4 <input type="checkbox"/> LEED V4.1 <input type="checkbox"/> OTHER <input type="checkbox"/> B.T.E.X.	
	TAT: Standard <input checked="" type="checkbox"/> Next Day Rush* <input type="checkbox"/> * Rush charges apply; please call in advance to confirm availability	

Comments:

UL ID	SAMPLE ID/ TUBE ID	SAMPLE LOCATION/ DESCRIPTION	START TIME	STOP TIME	TIME SAMPLED (MIN)	PUMP ID #	FLOW RATE (L/MIN)	VOLUME (L)
V01	2009049NY-05A/ s/n B26602	Burn_05_BR_04_Pre	08:25	09:25	60	4257	0.293 L	17.59 L
V02	2009049NY-05B/ s/n B26989	Burn_05_BR_04_Post	11:56	12:56	60	4257	0.290 L	17.38 L
V01F	2009049NY-05C/ s/n B26919	Burn_05_BR_04_Field Blank						n/a

3387943



3387943

Released By: SAM.HORNER (Print/Sign)	Date/Time: 12OCT2020	Method of Shipment: UPS Next D:	Description 2009049NY
Received By: <i>[Signature]</i>	Date/Time: 10/13/20 10:30 AM	Sample Condition: Acceptable	

Customer: UL Environment Inc.  
Aurora Project No.: 1001053392  
Received Date: Order No.:  
2020-OCT-14 09:05:17 AM Oracle Project No.:

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