




FIELD SAMPLING TEST REPORT	
Customer Information	UL VERIFICATION SERVICES, INC. LST.FAI.HBDCResults@ul.com 3251 Old Lee Highway, Suite 100 Fairfax VA 22030 USA
HB Project Number	2010030NY
Date Received	October 27, 2020
Testing Laboratory Location	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
Method	USEPA Compendium Method TO-17 ; ASTM 6196
Authorized by	 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 13, 2020
Product #: 1001070976-3418940
Report #: 1001070976-3418940
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UL ID:	SV1TFD
Sample Date:	October 25, 2020
Volume (L):	18.4

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		B10_LR_Hall_Pre	
Total Volatile Organic Compounds		311 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)	88.3	10.0
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	66.9	7.6
64-19-7	Acetic acid	15.5	6.3
66-25-1	Hexanal	15.3	3.7
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	10.0	3.4
91-20-3	Naphthalene	8.4	1.6
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	7.6	1.4
98-01-1	Furfural (2-Furaldehyde)	7.2	1.8
71-36-3	1-Butanol (N-Butyl alcohol)	6.4	2.1
629-50-5	Tridecane	5.1	0.7
111-76-2	Ethanol, 2-butoxy	4.8	1.0
138-86-3	Limonene (Dipentene; 1-Methyl-4-(1-methylethyl)cyclohexene)	4.7	0.8
544-25-2	1,3,5-Cycloheptatriene*	4.4	1.2
110-62-3	Pentanal	4.3	1.2
124-19-6	Nonyl aldehyde (Nonanal)	4.2	0.7
127-91-3	Pinene, beta (6,6-Dimethyl-2-methylene-bicyclo[3.1.1]heptane)	4.1	0.7
104-76-7	1-Hexanol, 2-ethyl	3.9	0.7
112-41-4	1-Dodecene	3.9	0.6
110-43-0	2-Heptanone	3.6	0.8
116-09-6	2-Propanone, 1-hydroxy	3.5	1.2
142-96-1	n-Butyl ether	3.5	0.7
71-41-0	1-Pentanol (N-Pentyl alcohol)	3.4	1.0
2306-88-9	Octanoic acid. octyl ester*	3.3	0.3
108-95-2	Phenol	3.1	0.8
1560-97-0	Dodecane, 2-methyl*	3.0	0.4
2765-11-9	Pentadecanal*	2.9	0.3
123-86-4	Acetate, butyl	2.9	0.6
100-42-5	Styrene	2.8	0.6
112-40-3	Dodecane	2.5	0.4
100-52-7	Benzaldehyde	2.4	0.6
108-65-6	1-Methoxy-2-propyl acetate*	2.4	0.4
124-13-0	Octanal	2.3	0.4
26730-14-3	Tridecane, 7-methyl*	2.3	0.3
140-67-0	Estragole (4-Allylanisole)	2.2	0.4
112-31-2	Decanal*	2.2	0.3

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Sample Date:	October 25, 2020
Volume (L):	18.4

CAS Number	Compound	Concentration	
		µg/m ³	ppb
1330-20-7	Xylenes (Total)	2.1	0.5
79-41-4	2-Propenoic acid, 2-methyl*	2.1	0.6
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	2.1	0.5
62108-24-1	Decane, 2,6,6-trimethyl*	2.0	0.3
17312-62-8	Decane, 5-propyl*	2.0	0.3

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UL ID:	SV1TFDF
Sample Date:	October 25, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		B10_LR_Hall_Field Blank	
Total Volatile Organic Compounds		BQL	
CAS Number	Compound	Concentration	
		µg/m³	ppb
109-67-1	1-Pentene	4.0	1.4

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UL ID:	SV2TFD
Sample Date:	October 26, 2020
Volume (L):	18.5

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		B10_LR_Hall_Post	
Total Volatile Organic Compounds		33.4 µg/m³	
CAS Number	Compound	Concentration	
		µg/m³	ppb
64-19-7	Acetic acid	35.1	14.3
112-25-4	Ethanol, 2-(hexyloxy)*	4.6	0.8
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	4.3	0.5
116-09-6	2-Propanone, 1-hydroxy	3.9	1.3
91-20-3	Naphthalene	3.6	0.7
71-43-2	Benzene	2.9	0.9
98-01-1	Furfural (2-Furaldehyde)	2.7	0.7
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	2.6	0.3
120-92-3	Cyclopentanone	2.5	0.7
66-25-1	Hexanal	2.2	0.5
108-95-2	Phenol	2.1	0.5

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UL ID:	SV3TFD
Sample Date:	October 26, 2020
Volume (L):	8.3

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description		B10_LR_Kitchen_30min_HZA	
Total Volatile Organic Compounds		2,010 µg/m³	
CAS Number	Compound	Concentration	
		µg/m³	ppb
64-19-7	Acetic acid	294	120
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	114	12.9
71-43-2	Benzene	111	34.6
930-27-8	Furan, 3-methyl*	79.6	23.7
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	76.3	8.6
98-01-1	Furfural (2-Furaldehyde)	75.6	19.2
91-20-3	Naphthalene	64.0	12.2
116-09-6	2-Propanone, 1-hydroxy	61.0	20.1
108-95-2	Phenol	41.1	10.7
100-42-5	Styrene	40.1	9.4
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	38.7	13.1
168920-35-2	Methoxyacetic acid, pentyl ester*	37.9	5.8
1330-20-7	Xylenes (Total)	37.9	8.7
120-92-3	Cyclopentanone	37.9	11.0
90-05-1	Phenol, 2-methoxy*	36.1	7.1
108-88-3	Toluene (Methylbenzene)	35.5	9.4
7473-98-5	2-Hydroxy-iso-butyrophenone*	35.0	5.2
108-65-6	1-Methoxy-2-propyl acetate*	34.2	6.3
66-25-1	Hexanal	31.3	7.6
98-00-0	2-Furanmethanol*	29.1	7.2
100-52-7	Benzaldehyde	28.1	6.5
271-89-6	Benzofuran*	25.6	5.3
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	24.7	4.4
102-76-1	1,2,3-Propanetriol, triacetate (Triacetin)*	24.5	2.7
5077-67-8	1-Hydroxy-2-butanone*	24.4	6.8
620-17-7	Phenol, 3-ethyl-*	23.7	4.7
620-02-0	2-Furancarboxaldehyde, 5-methyl*	21.7	4.8
767-60-2	1H-Indene, 3-methyl*	20.5	3.8
95-13-6	Indene*	19.0	4.0
110-43-0	2-Heptanone	18.9	4.1
25551-13-7	Trimethylbenzene (All Isomers)	17.8	3.6
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	17.5	4.3
600-22-6	Propanoic acid, 2-oxo-, methyl ester*	17.1	4.1
53957-33-8	Benzenemethanol, 2,5-dimethyl-*	17.1	3.1
93-51-6	Phenol, 2-methoxy-4-methyl*	16.3	2.9

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Volume (L):	8.3

CAS Number	Compound	Concentration	
		µg/m³	ppb
2595-97-3	D-Allose*	15.1	2.0
3126-95-2	Oxirane, (propoxymethyl)-*	15.0	3.2
6704-19-4	1-Propanone, 1-cyclopropyl-*	14.9	3.7
110-86-1	Pyridine	14.8	4.6
208-96-8	Acenaphthylene*	14.3	2.3
765-70-8	1,2-Cyclopentanedione, 3-methyl*	14.2	3.1
111-76-2	Ethanol, 2-butoxy	14.1	2.9
123-86-4	Acetate, butyl	13.9	2.9
100-51-6	Benzyl alcohol (Benzenemethanol)*	13.8	3.1
5771-32-4	Spiro[2.4]heptan-4-one*	13.3	3.0
105-30-6	1-Pentanol, 2-methyl*	13.3	3.2
95-87-4	Phenol, 2,5-dimethyl-*	13.2	2.6
91-10-1	Phenol, 2,6-dimethoxy*	13.1	2.1
638-49-3	Formic acid, pentyl ester*	12.9	2.7
142-62-1	Hexanoic acid	12.7	2.7
68-12-2	Formamide, N,N-dimethyl*	11.9	4.0
112-15-2	Ethanol, 2-(2-ethoxyethoxy), acetate*	11.7	1.6
100-47-0	Benzonitrile	11.2	2.7
13429-07-7	2-Propanol, 1-(2-methoxypropoxy)-*	10.8	1.8
1000185-00-9	5-Isopropenyl-2-methyl-7-oxabicyclo[4.1.0]heptan-2-ol*	10.5	1.5
541-02-6	Cyclopentasiloxane, decamethyl	10.3	0.7
19784-98-6	Phenol, 2-methoxy-5-(1-propenyl)-, (E)-*	10.3	3.9
61233-77-0	Cyclohexene, 4-ethyl-3-ethylidene*	10.2	1.8
1000298-33-6	3,7-Dimethyloctyl ethylphosphonofluoridoate*	10.1	1.0
79-41-4	2-Propenoic acid, 2-methyl*	9.7	2.8
31458-33-0	5-Methoxypyrimidine*	9.6	2.1
109-67-1	1-Pentene	9.6	3.4
1000293-33-2	m-Toluic acid, 2-ethylcyclohexyl ester*	9.5	0.9
629-50-5	Tridecane	9.4	1.3
2785-89-9	Phenol, 4-ethyl-2-methoxy*	9.4	1.5
33467-76-4	2-Hepten-1-ol, (E)-*	9.0	1.9
5877-42-9	1-Octyn-3-ol, 4-ethyl*	8.9	1.4
126-86-3	2,4,7,9-Tetramethyl-5-decyn-4,7-diol*	8.8	1.0
91-57-6	Naphthalene, 2-methyl	8.6	1.5
7583-53-1	1-Methyl-3-piperidinemethanol*	8.2	1.5
3008-40-0	1,2-Cyclopentanedione*	8.1	2.0
1575-57-1	2-Butanone, 1-(acetyloxy)-*	8.0	1.5
621-58-9	Phenol, 5-ethenyl-2-methoxy-*	8.0	1.3
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	7.8	1.6
130876-99-2	5,8-Decadien-2-one, 5,9-dimethyl-, (E)-*	7.3	1.0
103-11-7	2-Propenoic acid, 2-ethylhexyl ester (2-Ethylhexyl acrylate)	7.2	0.9
135-77-3	1,2,4-Trimethoxybenzene*	6.8	1.0
107-21-1	1,2-Ethanediol (Ethylene glycol)	6.5	2.6
107-98-2	2-Propanol, 1-methoxy-*	6.3	1.7

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Volume (L):	8.3

CAS Number	Compound	Concentration	
		µg/m³	ppb
515-13-9	Cyclohexane, 1-ethenyl-1-methyl-2,4-bis(1-methylethenyl), [1S-(1a,2a,4a)]	6.3	0.8
28125-74-8	1,4-Dioxane, 2-methyl-3-methylene*	6.3	1.5
1120-73-6	2-Cyclopenten-1-one, 2-methyl*	5.8	1.5
97-96-1	Butanal, 2-ethyl-*	5.7	1.4
92-52-4	1,1'-Biphenyl*	5.7	0.9
98-82-8	Benzene, 1-methylethyl (Cumene)	5.6	1.1
96-54-8	1H-Pyrrole, 1-methyl-*	5.2	1.6
770-35-4	1-Phenoxypropan-2-ol*	5.2	0.8
60415-94-3	2-Acetoncyclopentanone*	5.1	0.9
3968-86-3	2-Methyl-1-phenyl-1-butanol*	5.0	0.7
109-99-9	Furan, tetrahydro (THF)	4.9	1.7
106-97-8	Butane	4.8	2.0
3856-25-5	Copaene*	4.8	0.6
121-33-5	Vanillin (Benzaldehyde, 4-hydroxy-3-methoxy-)*	4.7	0.8
79-10-7	2-Propenoic acid (Acrylic acid)	4.5	1.5
17059-52-8	Benzofuran, 7-methyl*	4.1	0.8
289-95-2	1,3-Diazine*	4.1	1.2
4505-38-8	2-Cyclohexene-1,4-dione*	3.9	0.9
79-20-9	Acetate, methyl (Acetic acid, methyl ester)	3.9	1.3
109-08-0	Pyrazine, methyl*	3.9	1.0
107-16-4	Acetonitrile, hydroxy*	3.8	1.6
4170-30-3	2-Butenal	3.8	1.3
765-43-5	Ethanone, 1-cyclopropyl*	3.8	1.1
79-16-3	Acetamide, N-methyl*	3.7	1.2
19261-13-3	3-Butene-1,2-diol, 1-(2-furanyl)-*	3.6	1.6
623-49-4	Carbonocyanidic acid, ethyl ester*	3.6	0.9
593-75-9	Methane, isocyano*	3.6	2.1
79-09-4	Propanoic acid	3.4	1.1
4254-14-2	R-(-)-1,2-propanediol*	3.3	1.1
1119-40-0	Dimethyl glutarate	3.2	0.5
86-73-7	2,2-Metaylenebiphenyl (Fluorene)*	3.2	0.5
119-65-3	Isoquinoline*	3.2	0.6
10229-10-4	3-Pentyn-1-ol*	3.2	0.9
62238-13-5	Decane, 2,3,7-trimethyl*	2.9	0.4
6846-50-0	TXIB (2,2,4-Trimethyl-1,3-pentanediol diisobutyrate)	2.9	0.2
513-86-0	2-Butanone, 3-hydroxy*	2.9	0.8
120-51-4	Benzyl Benzoate*	2.9	0.3
6270-16-2	3-Nitro-2-butanol*	2.8	0.6
84-69-5	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester*	2.7	0.2
3724-65-0	Crotonic acid*	2.7	0.8
625-86-5	Furan, 2,5-dimethyl-*	2.7	0.7
544-76-3	Hexadecane (Cetane)	2.5	0.3
1000314-85-9	Phthalimide, N-isopropyl-*	2.4	0.3

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CAS Number	Compound	Concentration	
		µg/m³	ppb
109-06-8	Pyridine,2-methyl (2-Picoline)*	2.4	0.6
20314-74-3	di-n-Amylfumarate*	2.3	0.2
132-64-9	Dibenzofuran*	2.3	0.3
2736-37-0	Isobutyryl bromide*	2.1	0.3
35633-52-4	Propanenitrile, 3-(2-methoxy-1-methylethoxy)-*	2.1	0.4
613-46-7	2-Naphthalenecarbonitrile*	2.0	0.3

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

Field Blanks: Reported concentrations based on 18.0 L of volume sampled for VOCs. Actual field blanks are not intended to have a measurable amount of air sampled.

Values below 2.0 µg/m³ 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.

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 # 2010030NY_B10

1001070976-3418940



ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY								
Company: ULVS (Healthy Buildings)			Contact: CARESULTS@UL.COM			Project/P.O./Job Number: 2010030NY_B10		
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030			Phone: 571.655.7919 Fax: 703.323.4440			Sample Date: 25-26OCT2020 Investigator: SAM.HORNER		
Please check the appropriate fields; Use separate COC for each sample method.	VOLATILE ORGANICS: IVOC SCAN: <u> </u> TOP 20 IVOC <u> </u> TVOC ONLY <u> </u> OTHER <u> </u> B.T.E.X. <u> </u>							
	ALDEHYDE SCAN: <u> </u> FORMALDEHYDE ONLY <u> </u>				ANALYSIS: LEED V4 <u> </u> LEED V4.1 <u> </u> OTHER <u> </u> B.T.E.X. <u> </u>			
	TAT: Standard <u> X </u> Next Day Rush* <u> </u> * Rush charges apply; please call in advance to confirm availability							
Comments: One (1) Week TAT Please – Looking for results by COB Tuesday November 3 rd . Thank you								
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	2010030NY-10A/ s/n B26431	B10_LR_Hall_Pre	25Oct 16:10	25Oct 17:10	60	4257	0.306	18.35L
V02	2010030NY-10B/ s/n B26955	B10_LR_Hall_Post	26Oct 12:13	26Oct 13:13	60	4257	0.308	18.48L
V03	2010030NY-10C/ s/n B26597-8269	B10_Kitchen_30min HZA	26Oct 11:28	26Oct 12:05	38	5119	0.219	8.31L
V01F	2010030NY-10D/ s/n B26205	B10_LR_Hall_Field Blank						n/a
					3418940			
Released By: SAM.HORNER (Print/Sign) <i>[Signature]</i>			Date/Time: 26OCT2020		Method of Shipment: UPS Next		Description 2010030NY_B10	
Received By: <i>[Signature]</i>			Date/Time: 10/27/20 11:20AM		Sample Condition: Acceptable		Customer: UL Verification Services, Inc. Received Date: 2020-OCT-27 12:13:03 PM Aurora Project No.: 1001070976 Order No.: Oracle Project No.:	

