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_B12
Date Received	November 4, 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

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.

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.

Date Issued: November 16, 2020
Product #: 1001070976-3438831
Report #: 1001070976-3438831

UL ID:	SV1TFDF
Sample Date:	October 30, 2020
Volume (L):	18.0

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B12_LR_Hall_Field Blank
Total Volatile Organic Compounds	BQL

CAS Number	Compound	Concentration	
		µg/m³	ppb
109-67-1	1-Pentene	5.5	1.9

Date Issued: November 16, 2020
Product #: 1001070976-3438831
Report #: 1001070976-3438831

UL ID:	SV1TFD
Sample Date:	October 30, 2020
Volume (L):	24.1

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B12_LR_Hall_Pre
Total Volatile Organic Compounds	1,240 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)	183	20.6
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	164	18.6
64-19-7	Acetic acid	103	42.0
108-88-3	Toluene (Methylbenzene)	88.2	23.4
66-25-1	Hexanal	60.7	14.8
71-36-3	1-Butanol (N-Butyl alcohol)	34.4	11.3
91-20-3	Naphthalene	33.9	6.5
98-01-1	Furfural (2-Furaldehyde)	31.7	8.1
111-76-2	Ethanol, 2-butoxy	23.8	4.9
104-76-7	1-Hexanol, 2-ethyl	22.8	4.3
112-41-4	1-Dodecene	20.9	3.0
142-96-1	n-Butyl ether	20.7	3.9
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	20.4	3.7
71-41-0	1-Pentanol (N-Pentyl alcohol)	18.6	5.1
110-43-0	2-Heptanone	15.7	3.4
110-62-3	Pentanal	15.6	4.4
5989-27-5	D-Limonene*	14.5	2.6
123-86-4	Acetate, butyl	14.5	3.1
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	14.5	4.9
629-50-5	Tridecane	14.4	1.9
124-19-6	Nonyl aldehyde (Nonanal)	14.1	2.4
108-95-2	Phenol	13.1	3.4
144-19-4	1,3-Pentanediol, 2,2,4-trimethyl	12.8	2.1
96-29-7	2-Butanone, oxime*	12.2	3.4
124-13-0	Octanal	10.8	2.1
67-64-1	Acetone	10.3	4.3
78-83-1	1-Propanol, 2-methyl (Isobutyl alcohol)	9.8	3.2
100-42-5	Styrene	9.1	2.1
140-67-0	Estragole (4-Allylanisole)	8.9	1.5
100-52-7	Benzaldehyde	8.8	2.0
541-02-6	Cyclopentasiloxane, decamethyl	8.8	0.6
108-65-6	1-Methoxy-2-propyl acetate*	8.7	1.6
127-91-3	Pinene, beta (6,6-Dimethyl-2-methylene-bicyclo[3.1.1]heptane)	8.5	1.5
1000099-98-7	1-Ethylpropyl 2-ethylhexanoate*	8.1	0.9

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Volume (L):	24.1

CAS Number	Compound	Concentration	
		µg/m³	ppb
115948-98-6	2,2-Dimethyl-3-vinyl-bicyclo[2.2.1]heptane*	8.0	1.3
1330-20-7	Xylenes (Total)	8.0	1.8
112-40-3	Dodecane	7.4	1.1
2682-20-4	3(2H)-Isothiazolone, 2-methyl-*	7.3	1.6
112-53-8	1-Dodecanol*	7.1	0.9
91-57-6	Naphthalene, 2-methyl	6.8	1.2
620-02-0	2-Furancarboxaldehyde, 5-methyl*	6.7	1.5
142-62-1	Hexanoic acid	6.6	1.4
62338-12-9	Silane. trimethyl(4-methyl-3-penten-1-ynyl)-*	6.5	1.1
111-87-5	1-Octanol	6.5	1.2
50871-03-9	1-Decene, 3,4-dimethyl-*	6.4	0.9
68443-63-0	Butyl 2-ethylhexanoate*	6.0	0.7
3777-69-3	Furan, 2-pentyl	5.9	1.1
764-13-6	2,4-Hexadiene, 2,5-dimethyl*	5.8	1.3
57-55-6	1,2-Propanediol (Propylene glycol)	5.8	1.9
208-96-8	Acenaphthylene*	5.7	0.9
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	5.6	1.1
4926-90-3	Cyclohexane, 1-ethyl-1-methyl*	5.6	1.1
92-52-4	1,1'-Biphenyl*	5.5	0.9
79-31-2	Propanoic acid, 2-methyl*	5.5	1.5
1560-97-0	Dodecane, 2-methyl*	5.5	0.7
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	5.4	1.3
17301-23-4	Undecane, 2,6-dimethyl	5.4	0.7
102-76-1	1,2,3-Propanetriol, triacetate (Triacetin)*	5.3	0.6
79-41-4	2-Propenoic acid, 2-methyl*	5.1	1.5
818-72-4	1-Octyn-3-ol	4.8	0.9
3891-99-4	2,6,10-Trimethyltridecane*	4.7	0.5
100-51-6	Benzyl alcohol (Benzenemethanol)*	4.6	1.0
109-67-1	1-Pentene	4.5	1.6
3891-98-3	Dodecane, 2,6,10-trimethyl*	4.4	0.5
25551-13-7	Trimethylbenzene (All Isomers)	4.2	0.9
108-10-1	2-Pentanone, 4-methyl (Methyl isobutyl ketone, MIBK)	4.1	1.0
100-41-4	Benzene, ethyl	4.1	0.9
68-12-2	Formamide, N,N-dimethyl*	3.9	1.3
112-15-2	Ethanol, 2-(2-ethoxyethoxy), acetate*	3.7	0.5
1000391-00-4	Succinic acid, dodec-9-yn-1-yl ethyl ester*	3.7	0.3
13429-07-7	2-Propanol, 1-(2-methoxypropoxy)-*	3.7	0.6
13287-21-3	Tridecane, 6-methyl*	3.7	0.5
111-70-6	1-Heptanol	3.7	0.8
1189-99-7	Heptane, 2,5,5-trimethyl*	3.6	0.6
6846-50-0	TXIB (2,2,4-Trimethyl-1,3-pentanediol diisobutyrate)	3.6	0.3
71-43-2	Benzene	3.6	1.1
98-00-0	2-Furanmethanol*	3.5	0.9

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Report #: 1001070976-3438831

UL ID:	SV1TFD
Sample Date:	October 30, 2020
Volume (L):	24.1

CAS Number	Compound	Concentration	
		µg/m³	ppb
95-13-6	Indene*	3.5	0.7
96-22-0	3-Pentanone*	3.4	1.0
1000316-00-2	1H-Indazole, 3-methyl-*	3.4	0.6
18720-66-6	3-Heptanol, 6-methyl-*	3.2	0.6
123-91-1	1,4-Dioxane	3.2	0.9
1000309-56-3	Oxalic acid, butyl 2-isopropylphenyl ester*	3.0	0.3
99-86-5	1,3-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-*	3.0	0.5
7473-98-5	2-Hydroxy-iso-butyrophenone*	2.9	0.4
107-21-1	1,2-Ethanediol (Ethylene glycol)	2.9	1.2
133645-25-7	1-Naphthalenol, 1,2,3,4,4a,7,8,8a-octahydro-1,6-dimethyl-4-(1-methylethyl)-, [1S-(1.alpha.,4.alpha.,4a.beta.,8a.beta.)]-	2.9	0.3
112-29-8	Decane, 1-bromo*	2.9	0.3
1560-96-9	Tridecane, 2-methyl*	2.9	0.4
1618-23-1	Naphthalene, 2-ethyldecahydro-*	2.8	1.0
1196-01-6	Bicyclo[3.1.1]hept-3-en-2-one, 4,6,6-trimethyl-, (1S)-*	2.7	0.4
1000327-11-8	3-Hydroxypropanoic acid 1-butyl ester*	2.7	0.5
107-87-9	2-Pentanone*	2.7	0.8
547-61-5	Bicyclo[3.1.1]heptan-3-ol, 6,6-dimethyl-2-methylene-, [1S-(1a, 3a, 5a)]-*	2.7	0.4
693-61-8	2-Undecene, (E)	2.5	0.4
80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl*	2.4	0.4
26321-98-2	Cyclohexane, (1-ethylpropyl)*	2.3	0.4
643-58-3	1,1'-Biphenyl, 2-methyl*	2.3	0.3
1002-69-3	Decane, 1-chloro*	2.3	0.3
79-09-4	Propanoic acid	2.3	0.7
79-20-9	Acetate, methyl (Acetic acid, methyl ester)	2.2	0.7
18829-55-5	2-Heptenal, (E)	2.2	0.5
930-27-8	Furan, 3-methyl*	2.1	0.6
107-98-2	2-Propanol, 1-methoxy-*	2.1	0.6
1669-44-9	3-Octen-2-one	2.1	0.4

UL ID:	SV2TFD
Sample Date:	October 30, 2020
Volume (L):	18.2

CONCENTRATIONS OF TOTAL AND INDIVIDUAL VOLATILE ORGANIC COMPOUNDS

Sample Location/Description	B12_LR_Hall_Post
Total Volatile Organic Compounds	631 µg/m³

CAS Number	Compound	Concentration	
		µg/m³	ppb
100-42-5	Styrene	54.2	12.7
71-43-2	Benzene	51.5	16.1
930-27-8	Furan, 3-methyl*	35.4	10.5
80-62-6	Methyl methacrylate (2-Propenoic acid, 2-methyl-, methyl ester)	34.7	8.5
116-09-6	2-Propanone, 1-hydroxy	33.1	10.9
91-20-3	Naphthalene	27.3	5.2
287-92-3	Cyclopentane	24.2	8.4
98-01-1	Furfural (2-Furaldehyde)	22.9	5.8
108-05-4	Acetate, vinyl (Acetic acid ethenyl ester)	21.7	6.2
108-88-3	Toluene (Methylbenzene)	20.6	5.5
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)	18.5	6.3
100-52-7	Benzaldehyde	16.9	3.9
108-95-2	Phenol	14.2	3.7
120-92-3	Cyclopentanone	13.8	4.0
19549-87-2	1-Heptene, 2,4-dimethyl*	11.1	2.2
90-05-1	Phenol, 2-methoxy*	10.8	2.1
66-25-1	Hexanal	9.6	2.3
141-32-2	Butyl acrylate (2-Propenoic Acid, butyl ester)	9.3	1.8
77-68-9	Propanoic acid, 2-methyl-, 3-hydroxy-2,2,4-trimethylpentyl ester (component of Texanol)	9.2	1.0
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	8.9	1.0
1330-20-7	Xylenes (Total)	8.6	2.0
98-83-9	a-Methylstyrene (iso-Propenylbenzene; (1-Methylethenyl)benzene)	8.4	1.7
64-19-7	Acetic acid	8.0	3.3
5077-67-8	1-Hydroxy-2-butanone*	7.8	2.2
106-44-5	Phenol, 4-methyl (p-Cresol)*	7.2	1.6
100-41-4	Benzene, ethyl	7.1	1.6
271-89-6	Benzofuran*	6.9	1.4
80-56-8	Pinene, alpha (2,6,6-Trimethyl-bicyclo[3.1.1]hept-2-ene)	6.3	1.1
110-86-1	Pyridine	5.9	1.8
95-87-4	Phenol, 2,5-dimethyl-*	5.7	1.1
3126-95-2	Oxirane, (propoxymethyl)-*	5.7	1.2
98-00-0	2-Furanmethanol*	5.6	1.4
2998-23-4	2-Propenoic acid, pentyl ester*	5.2	0.9

Date Issued: November 16, 2020
Product #: 1001070976-3438831
Report #: 1001070976-3438831

UL ID:	SV2TFD
Sample Date:	October 30, 2020
Volume (L):	18.2

CAS Number	Compound	Concentration	
		µg/m³	ppb
592-20-1	2-Propanone, 1-(acetyloxy)-*	5.1	1.1
98-86-2	Acetophenone (Ethanone, 1-phenyl)*	5.1	1.0
93-51-6	Phenol, 2-methoxy-4-methyl*	5.0	0.9
95-13-6	Indene*	4.7	1.0
100-47-0	Benzonitrile	4.7	1.1
25551-13-7	Trimethylbenzene (All Isomers)	4.7	0.9
95-48-7	Phenol, 2-methyl*	4.6	1.0
89321-71-1	(2S,3S)-(-)-3-Propyloxiranemethanol*	4.4	0.9
620-02-0	2-Furancarboxaldehyde, 5-methyl*	4.1	0.9
4265-25-2	Benzofuran, 2-methyl*	4.0	0.7
541-05-9	Cyclotrisiloxane, hexamethyl	4.0	0.4
123-91-1	1,4-Dioxane	3.9	1.1
541-02-6	Cyclopentasiloxane, decamethyl	3.5	0.2
22122-36-7	2(5H)-Furanone, 3-methyl*	3.5	0.9
42781-12-4	2-Propanone, 1-(1-methylethoxy)-*	3.4	0.7
112-15-2	Ethanol, 2-(2-ethoxyethoxy), acetate*	3.3	0.5
4170-30-3	2-Butenal	3.2	1.1
1000293-33-2	m-Toluic acid, 2-ethylcyclohexyl ester*	3.2	0.3
3809-32-3	2,5-Dimethylcyclohexanol*	3.1	0.6
1121-05-7	2-Cyclopenten-1-one, 2,3-dimethyl-*	3.0	0.7
600-22-6	Propanoic acid, 2-oxo-, methyl ester*	3.0	0.7
625-33-2	3-Penten-2-one*	2.9	0.9
590-90-9	2-Butanone, 4-hydroxy-*	2.9	0.8
91-57-6	Naphthalene, 2-methyl	2.9	0.5
80-71-7	2-Cyclopenten-1-one, 2-hydroxy-3-methyl-*	2.9	0.6
92-52-4	1,1'-Biphenyl*	2.9	0.5
53783-89-4	Hexanenitrile, 3-methyl*	2.8	0.6
71-41-0	1-Pentanol (N-Pentyl alcohol)	2.7	0.7
111-76-2	Ethanol, 2-butoxy	2.7	0.5
106-97-8	Butane	2.6	1.1
5989-27-5	D-Limonene*	2.6	0.5
3102-33-8	3-Penten-2-one, (E)-*	2.6	0.7
1120-73-6	2-Cyclopenten-1-one, 2-methyl*	2.5	0.6
597-49-9	3-Pentanol, 3-ethyl*	2.5	0.5
91-22-5	Quinoline*	2.5	0.5
300-57-2	Allylbenzene	2.5	0.5
103-80-0	Benzeneacetyl chloride*	2.4	0.4
102-76-1	1,2,3-Propanetriol, triacetate (Triacetin)*	2.4	0.3
22410-74-8	2,6-Octadien-1-ol, 2,7-dimethyl*	2.4	0.4
91-10-1	Phenol, 2,6-dimethoxy*	2.3	0.4
36960-22-2	1-Hydroxy-3-methyl-2-butanone*	2.3	0.6
543-49-7	2-Heptanol*	2.3	0.5
1000309-61-6	Oxalic acid, 4-chlorophenyl tetradecyl ester*	2.0	0.1
2785-89-9	Phenol, 4-ethyl-2-methoxy*	2.0	0.3
123-86-4	Acetate, butyl	2.0	0.4

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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_B12

1001070976-3438831

ACTIVE CHEMICAL SAMPLING CHAIN OF CUSTODY

Company: ULVS (Healthy Buildings)	Contact: CARESULTS@UL.COM	Project/P.O./Job Number: 2010030NY_B12
Address: 3251 Old Lee Highway #100 Fairfax, VA 22030	Phone: 571.655.7919 Fax: 703.323.4440	Sample Date: 30-31 OCT 2020 Investigator: SAM.HORNER

Please check the appropriate fields; Use separate COC for each sample method.

VOLATILE ORGANICS: IVOC SCAN: _____ TOP 20 IVOC _____ TVOC ONLY _____ OTHER ___B.T.E.X.

ALDEHYDE SCAN: _____ FORMALDEHYDE ONLY _____ ANALYSIS: LEED V4 ___ LEED V4.1 ___ OTHER _B.T.E.X.

TAT: Standard __X__ Next Day Rush*_____ * Rush charges apply; please call in advance to confirm availability

Comments: One (1) Week TAT Please – Looking for results by COB Tuesday November 10th. 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-12A/ s/n B26557	B12_LR_Hall_Pre	30 Oct 17:04	30 Oct 18:04	80	4257	0.30138	24.1104 L
V02	2010030NY-12B/ s/n B27026	B12_LR_Hall_Post	31 Oct 12:23	31 Oct 13:23	60	4257	0.30334	18.2001 L
V01F	2010030NY-12C/ s/n B26606*	B12_LR_Hall_ Field Blank						n/a
*Note:please	use this Field	Blank for 2010030NY_B11_D1	collected	on the	same date at the	same site	Thank you	

Released By: SAM HORNER (Print/Sign)	Date/Time: 03 Nov 2020	Method of Shipment: UPS Next D
Received By:	Date/Time: 11/4/20 0:15 AM	Sample Condition Acceptable

3438831

3438831

Description 2010030NY_B12

Customer: UL Verification Services, Inc.

Aurora Project No.: 1001070976

Received Date: Order No.:

2020-NOV-04 03:22:47 PM Oracle Project No.:

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Date Issued: November 16, 2020
Product #: 1001070976-3438831
Report #: 1001070976-3438831