VERMONT FORENSIC LABORATORY

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Certificate of Analysis of DataMaster External Standard Solution

On 7/5/2012, an ethanol solution was prepared by Amanda Bolduc for use as a DataMaster External Standard solution. The solution was prepared per standard laboratory practice and assigned the lot number 12-80-100 and an expiration date of 7/5/2013.

On 7/5/2012 and 7/6/2012, the solution was analyzed against calibration SimCal070512 and SimCal070612. Analysis of the solution was performed using headspace gas chromatography. The instrument was calibrated prior to analyses. It was found to have met required quality assurance performance specifications and was operating properly. Quality checks throughout the analytical process demonstrated that the instrument continued to operate properly.

This solution is certified as presenting 0.099 g/210L simulated breath ethanol concentration and approved for use as a DataMaster External Standard solution.

Dated at Waterbury, Vermont on Monday, July 09, 2012.

Amanda Bolduc

0.1 External Standard Solution 20L
Lot # 12-80 -100
Prepared 7/5/2012 by ALB
Exp 7/5/2013

ALB CAL SimCal 070512
ALB/TLCVials
Analyzed on 7/5/2012

0.0979 tlc
0.0988
0.0971
0.1004
0.0966
0.1002
0.0986
0.1019 alb
0.0992
0.1001
0.0978
0.1022
0.0977
0.0997

Ave. = 0.0992
Std Dev. = 0.0017
Range = 0.0966 - 0.1022

ALB CAL SimCal070612
ALB/TLC Vials
Analyzed on 7/6/12

0.0963 tlc
0.0983
0.0969
0.0984
0.0959
0.0989
0.0963
0.1011 alb
0.0968
0.1015
0.1017
0.0995
0.0989
0.1018

Ave. = 0.0987
Std Dev. = 0.0021
Range = 0.0959 - 0.1018

Total Values from Both Runs

Average	Mean
0.0979	0.0959
0.0988	0.0963
0.0971	
0.1004	0.0966
0.0966	0.0968
0.1002	0.0969
0.0986	0.0971
0.1019	0.0977
0.0992	0.0978
0.1001	0.0979
0.0978	0.0983
0.1022	0.0984
0.0977	0.0986
0.0997	0.0988
0.0963	0.0989
0.0983	
0.0969	0.0992
0.0984	0.0995
0.0959	0.0997
0.0989	0.1001
0.0963	0.1002
0.1011	0.1004
0.0968	0.1011
0.1015	0.1015
0.1017	0.1017
0.0995	0.1018
0.0989	0.1019
0.1018	0.1022

Ave. =	0.0989
Std Dev. =	0.0019
Range =	0.0959 - 0.1022
Mean =	0.0991
Mean Std Dev. =	0.0019
RPD (Mean to Ave.)=	0.20%

7/9/2012

Headspace Alcohol Analysis Standards Coversheet

Analyst: ALB Date: 7/6/12

Calibration Standards:

Lot ID: ES-05102012 Preparation Date: 05/10/2012 Expiration Date: 08/10/2012

	Standard A	Standard B	Standard C	Standard D	Standard E	Calibration Check
% Ethanol (w/v)	0.006	0.023	0.087	0.211	0.414	
Acceptance Range (± 10%)	0.007	0.025	0.096	0.232	0.455	
	0.005	0.021	0.078	0.190	0.372	

Control Sample:

Sample	Source	Lot number	Target Value	Acceptance Range		
Aqueous	Cerilliant	~~FN111711-01~~ FN 021111-03	~~0.100~~ 0.080	~~0.110~~ 0.072	~~0.090~~ 0.088	ALB 7/6/12

Calibration and Control Sample Data:

Vial No.	Sample Identification		Result	In Range?	Comments
1	Blank		<0.005	Y N	
2	Compound Retention Times:			N/A	
		Acetaldehyde	1.92		
		Methanol	2.02		
		Ethanol	2.66		
		Acetone	3.07		
		Isopropanol	3.20		
		T- butanol	3.64		
		n-propanol	4.45		
3	Standard A		0.006	Y N	
4	Standard B		0.023	Y N	
5	Standard C		0.087	Y N	
6	Standard D		0.210	Y N	
7	Standard E		0.415	Y N	
8	Aqueous QC		0.0804	Y N	
9	Aqueous QC		0.0793	Y N	$\bar{x}$ = 0.080 100% ✓

7/9/2012

File Name: C:\Methods\SimCal 07052012.cal
Version: 7

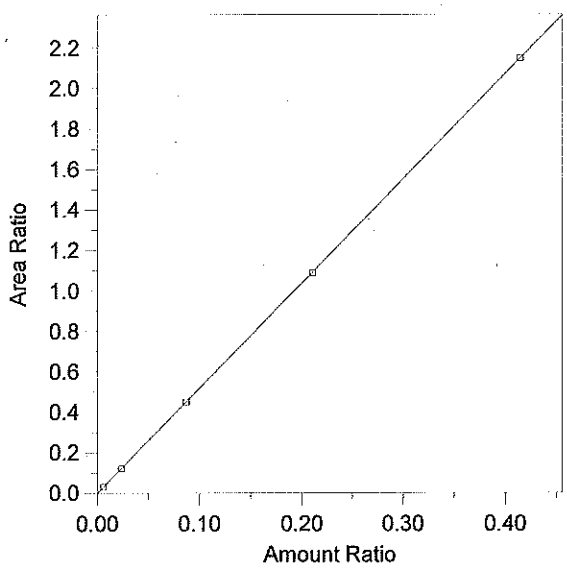
Creator:
Description:
Reason for change:

Internal standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 1000
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

3 Ethanol



Expected retention time:	2.666 minutes
Search window:	0.1 minutes
Internal standard component:	7 (n-Propanol)
No retention time reference component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

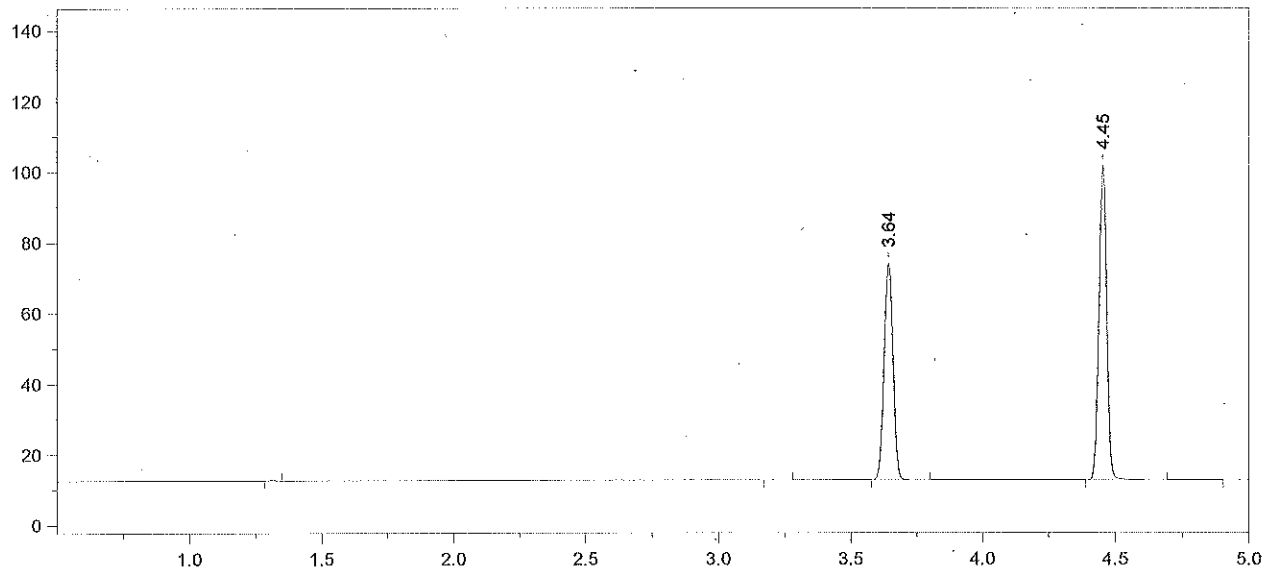
Single peak quantification by area

Y = 5.183479 X + 0

Linear fit with equal weighting, forced to origin

Coefficient of determination:	0.9999951
Average error:	1.202%
Average CF:	5.122694
RSD:	1.616%

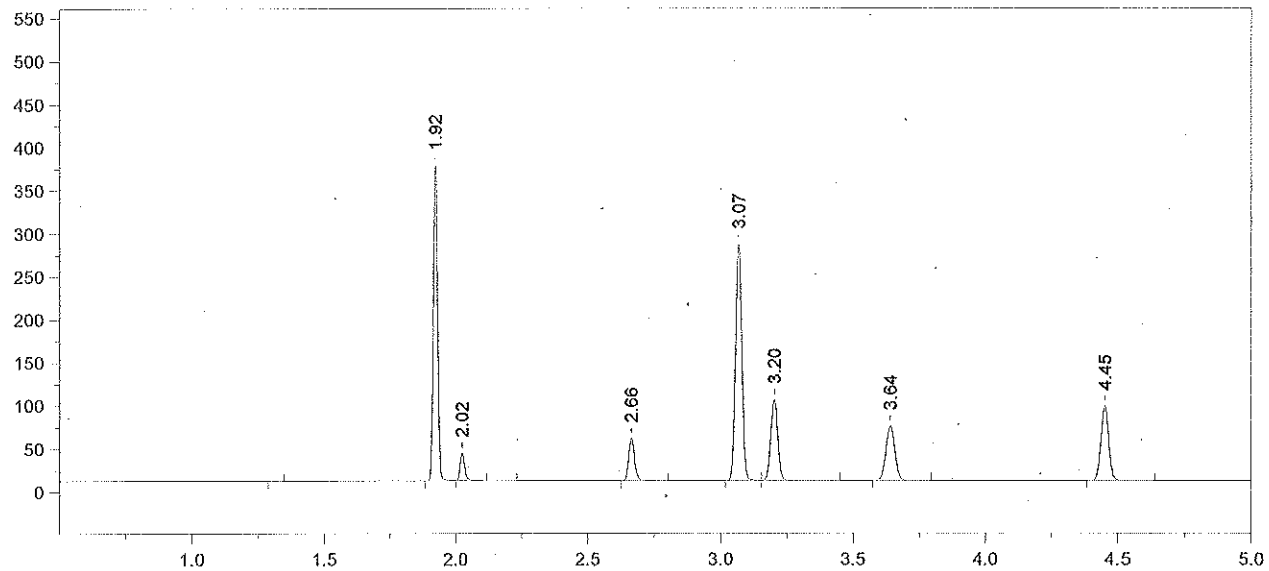
Level	Amount	Response	Cal Factor	Error, %	Amount Ratio	Response Ratio	Source	Date and time
1	(0.081)	(85146)	--	--	0.081	85146	Manual	5/11/2012 8:03:03 AM
2	0.0059	5151.019	873054.1	-3.757	0.0059	2.943342E-02	C:\Alcohol Data\SIM07052012\SIM07052012.0003.BND	7/5/2012 12:51:11 PM
3	0.0235	22026.18	937284.3	-1.682	0.0235	0.1197632	C:\Alcohol Data\SIM07052012\SIM07052012.0004.BND	7/5/2012 1:09:31 PM
4	0.0869	82105.57	944828.2	-0.284	0.0869	0.4491673	C:\Alcohol Data\SIM07052012\SIM07052012.0005.BND	7/5/2012 1:23:29 PM
5	0.2107	207928.6	986846.6	-0.215	0.2107	1.089812	C:\Alcohol Data\SIM07052012\SIM07052012.0006.BND	7/5/2012 1:40:56 PM
6	0.4144	406121.6	980023.1	0.074	0.4144	2.149627	C:\Alcohol Data\SIM07052012\SIM07052012.0007.BND	7/5/2012 1:54:08 PM



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012 Today's Time = 7:09:04 AM
Bound File Name = SIM07052012.0001.RAW
Sample Name = Blank
Date Taken = 7/5/2012 12:20:31 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	3.64	t-Butanol	141201	0.9635	0.7864
4	4.45	n-Propanol	188429	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012 Today's Time = 7:09:16 AM
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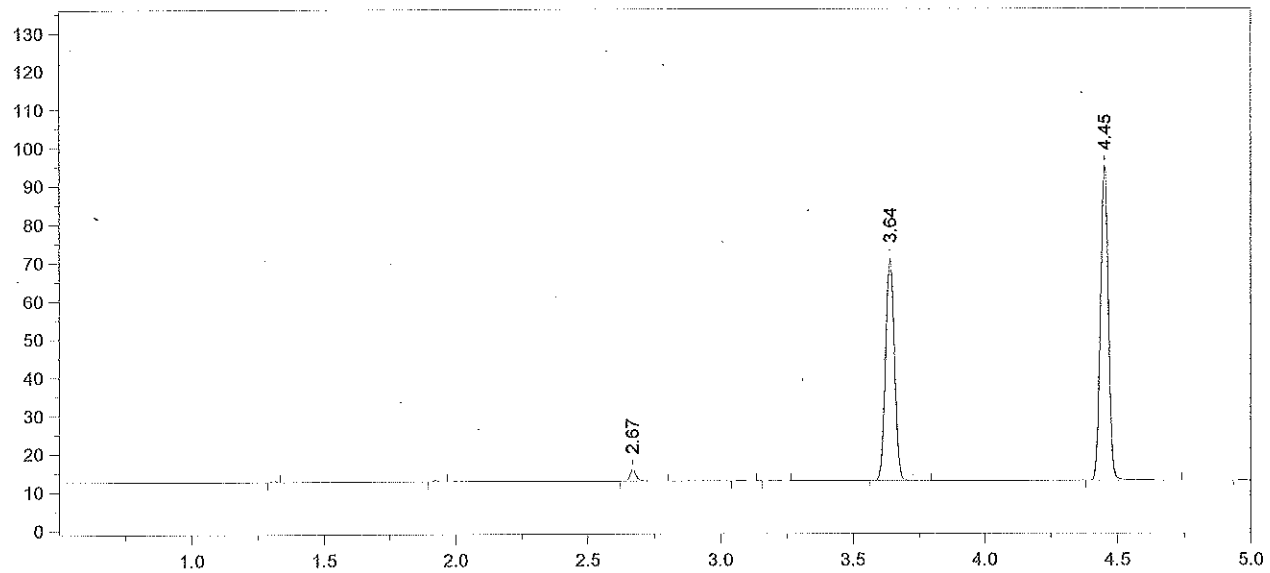
Sample Name = TMX
Date Taken = 7/5/2012 12:37:55 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	1.92	Acetaldehyde	422411	0.0900	0.0735
3	2.02	Methanol	39407	0.0920	0.0751
4	2.66	Ethanol	75953	0.0796	0.0650
5	3.07	Acetone	466886	0.0920	0.0751
6	3.20	Isopropanol	175600	0.1230	0.1004
7	3.64	t-Butanol	145694	1.0180	0.8309
8	4.45	n-Propanol	184018	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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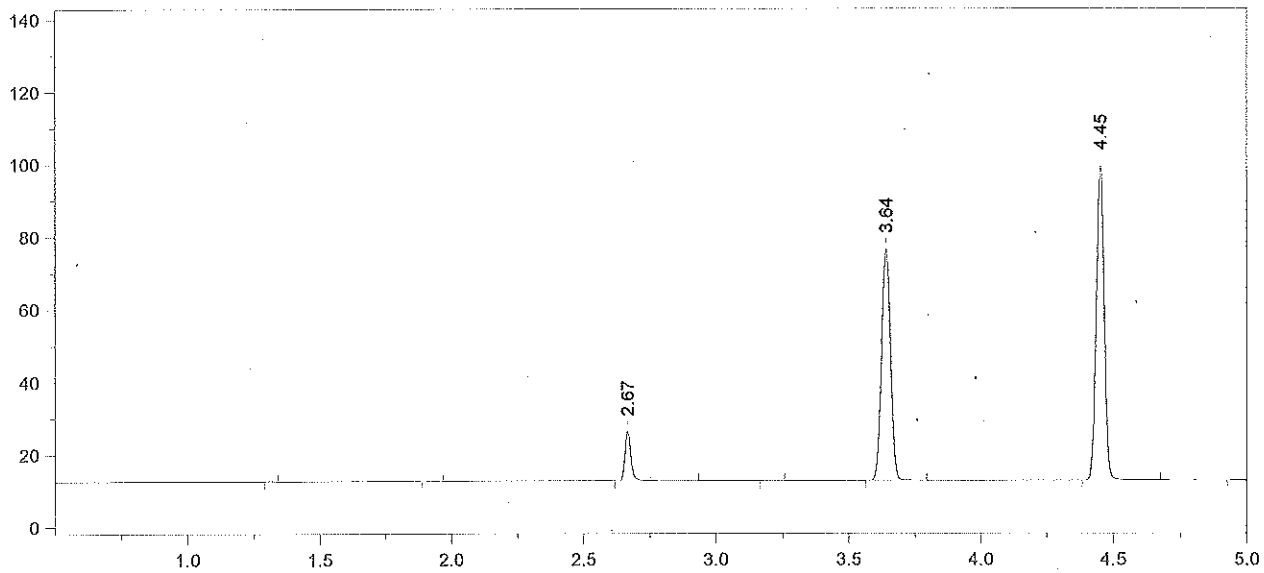
Today's Time = 7:09:23 AM
Bound File Name = SIM07052012.0003.RAW
Sample Name = STD A
Date Taken = 7/5/2012 12:51:05 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	05151	0.0057	0.0046
6	3.64	t-Butanol	133586	0.9815	0.8011
7	4.45	n-Propanol	175006	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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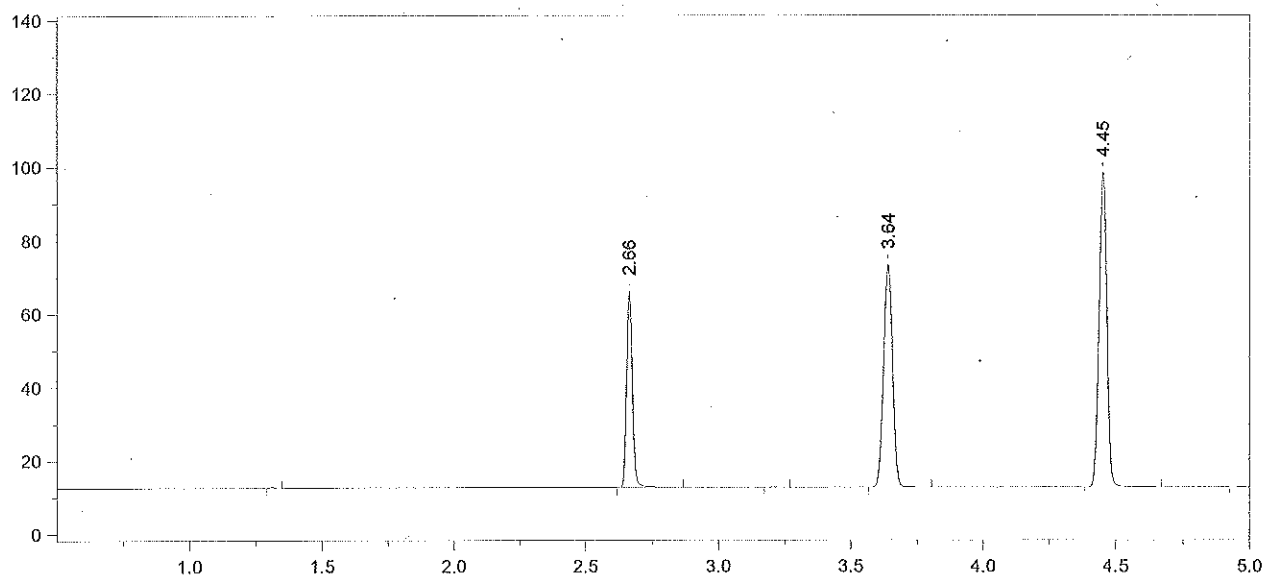
Today's Time = 7:09:31 AM
Bound File Name = SIM07052012.0004.RAW
Sample Name = STD B
Date Taken = 7/5/2012 1:09:19 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

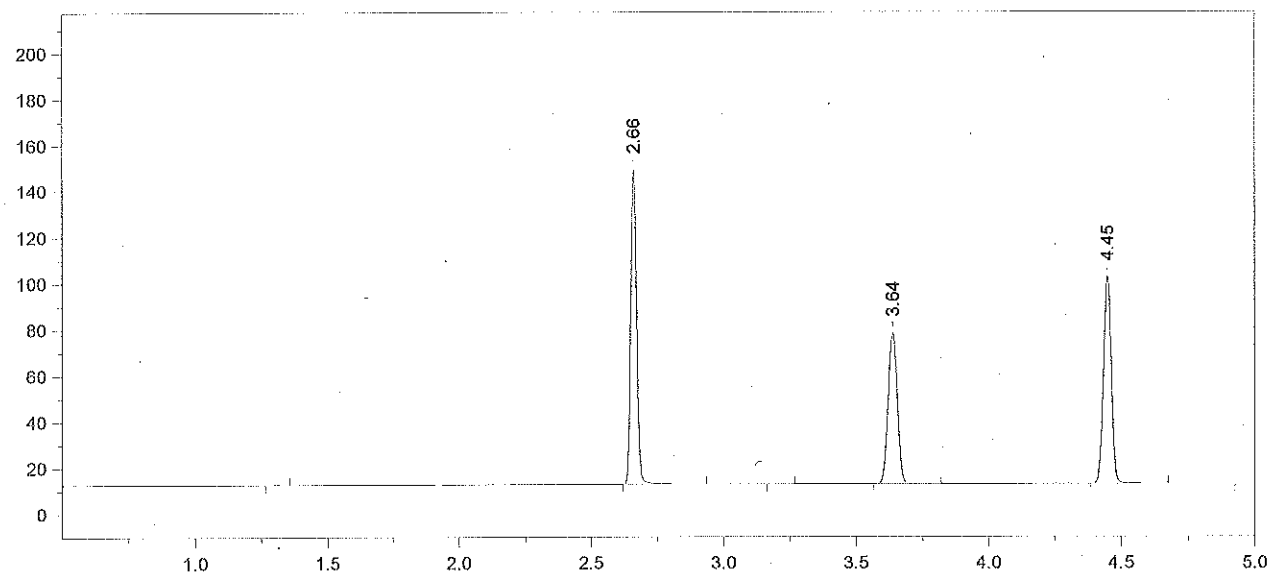
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	22026	0.0231	0.0189
5	3.64	t-Butanol	147081	1.0283	0.8393
6	4.45	n-Propanol	183914	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012 Today's Time = 7:09:41 AM
Bound File Name = SIM07052012.0005.RAW
Sample Name = STD C
Date Taken = 7/5/2012 1:23:22 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	82106	0.0867	0.0707
4	3.64	t-Butanol	139774	0.9832	0.8025
5	4.45	n-Propanol	182795	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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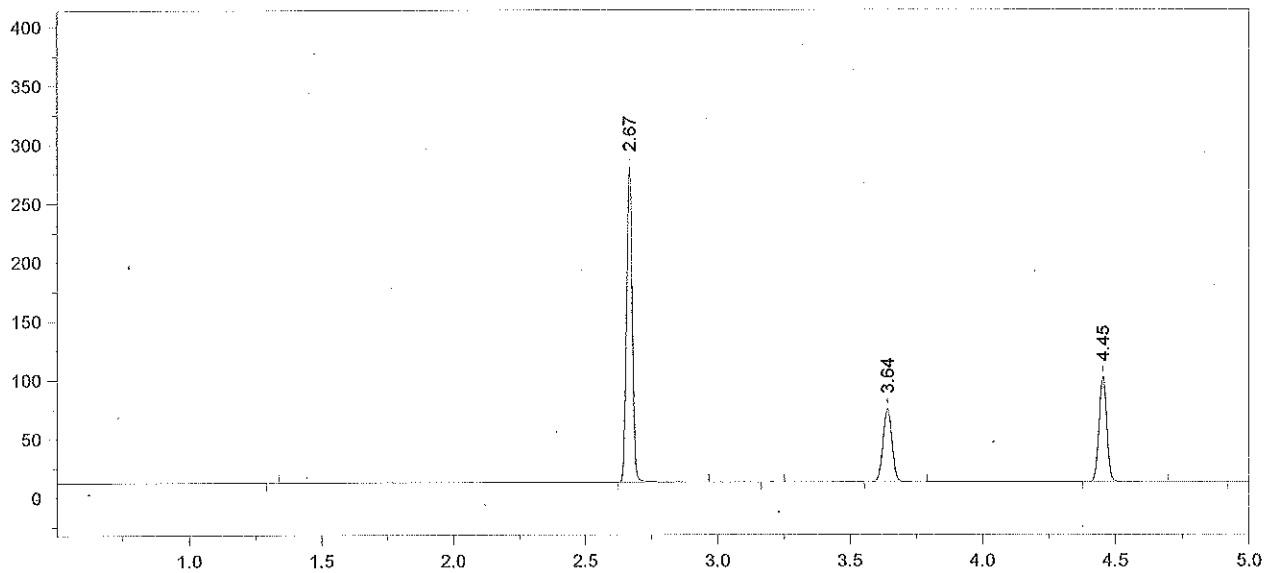
Today's Time = 7:09:51 AM
Bound File Name = SIM07052012.0006.RAW
Sample Name = STD D
Date Taken = 7/5/2012 1:40:46 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

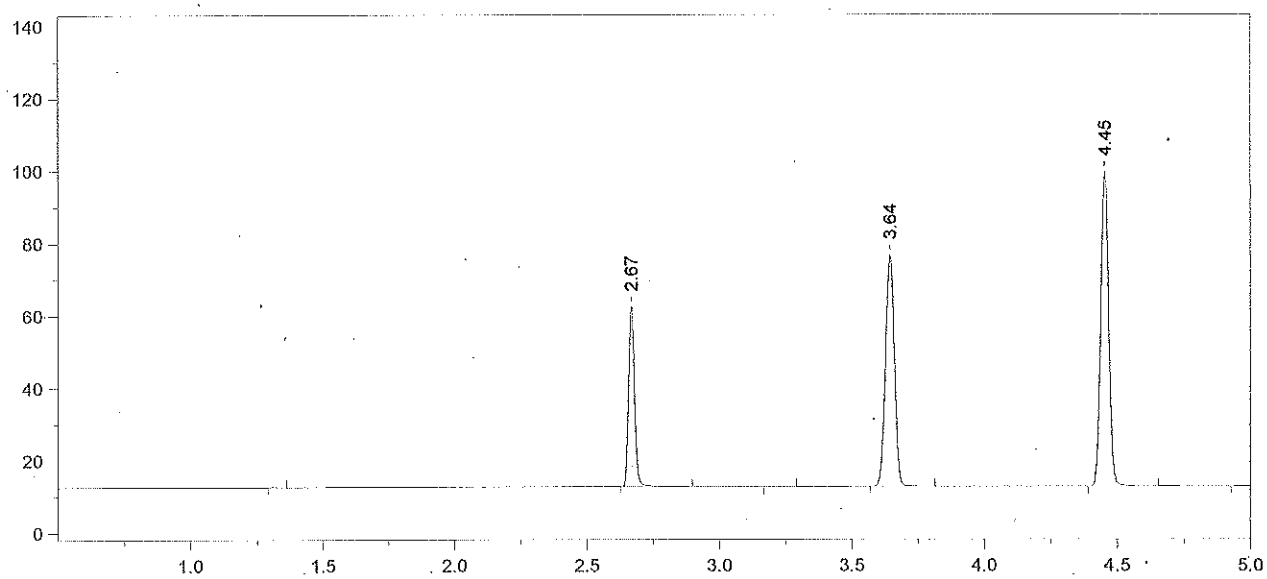
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	207929	0.2102	0.1716
4	3.64	t-Butanol	151402	1.0203	0.8328
5	4.45	n-Propanol	190793	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 7:09:59 AM
Bound File Name = SIM07052012.0007.RAW
Sample Name = STD E
Date Taken = 7/5/2012 1:53:59 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

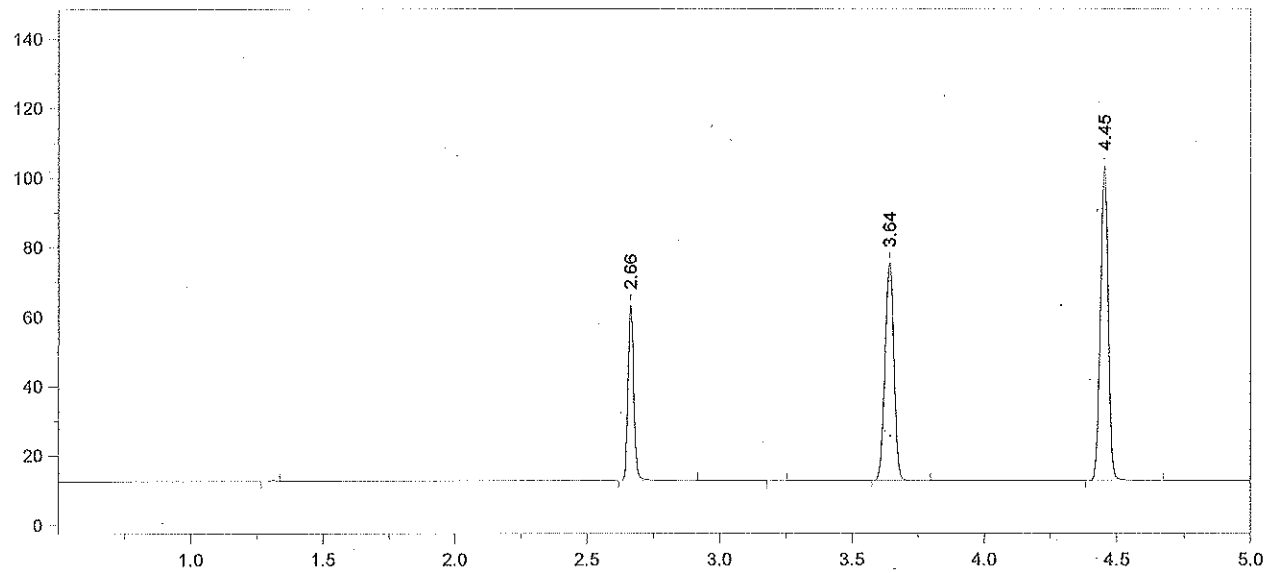
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	406122	0.4147	0.3385
4	3.64	t-Butanol	142358	0.9688	0.7908
5	4.45	n-Propanol	188927	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 2:12:16 PM
Bound File Name = SIM07052012.0008.RAW
Sample Name = AQ QC
Date Taken = 7/5/2012 2:12:10 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

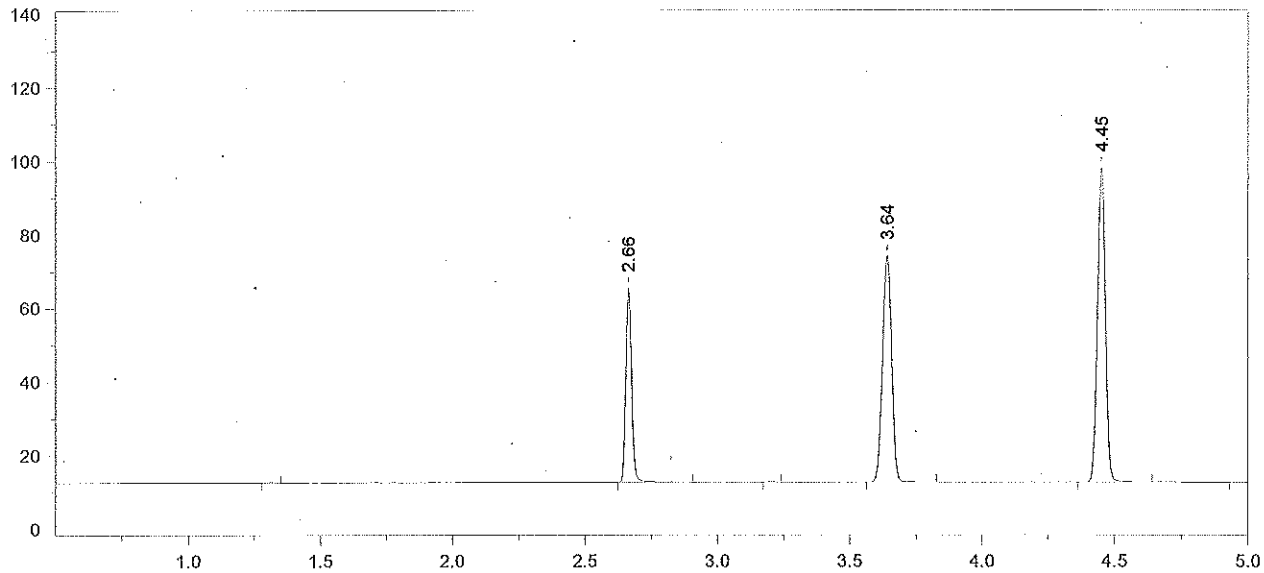
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	76833	0.0804	0.0656
4	3.64	t-Butanol	147166	1.0260	0.8374
5	4.45	n-Propanol	184433	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012 Today's Time = 2:25:56 PM
Bound File Name = SIM07052012.0009.RAW
Sample Name = AQ QC
Date Taken = 7/5/2012 2:25:46 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

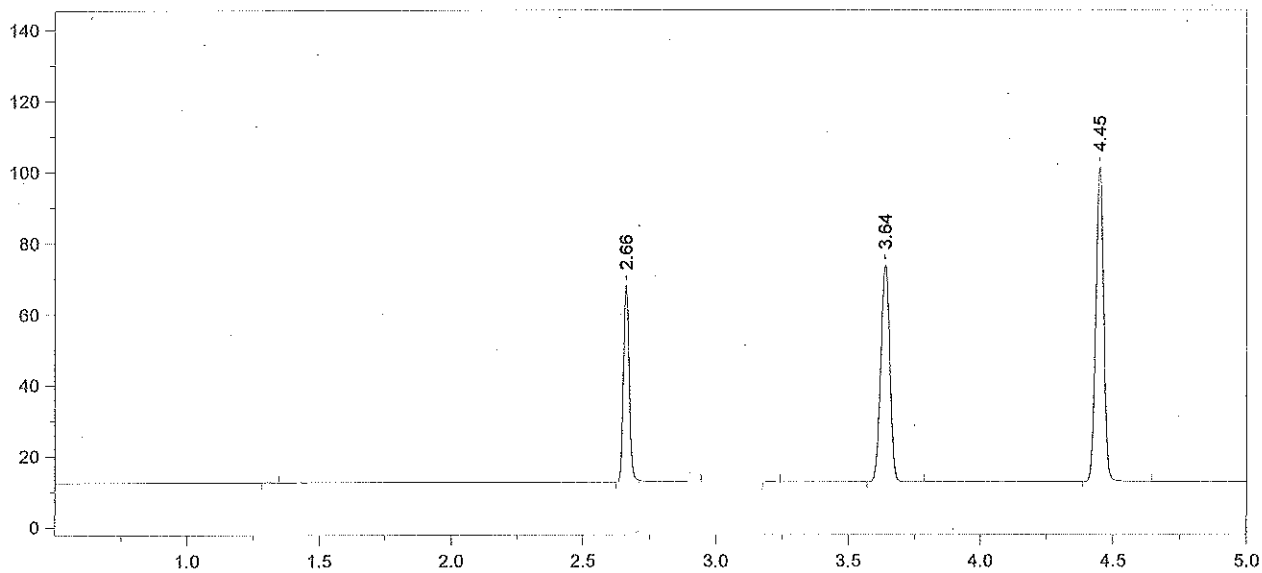
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	78671	0.0793	0.0647
4	3.64	t-Butanol	145015	0.9736	0.7947
5	4.45	n-Propanol	191506	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012 Today's Time = 2:43:42 PM
Bound File Name = SIM07052012.0010.RAW
Sample Name = CCS
Date Taken = 7/5/2012 2:43:35 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

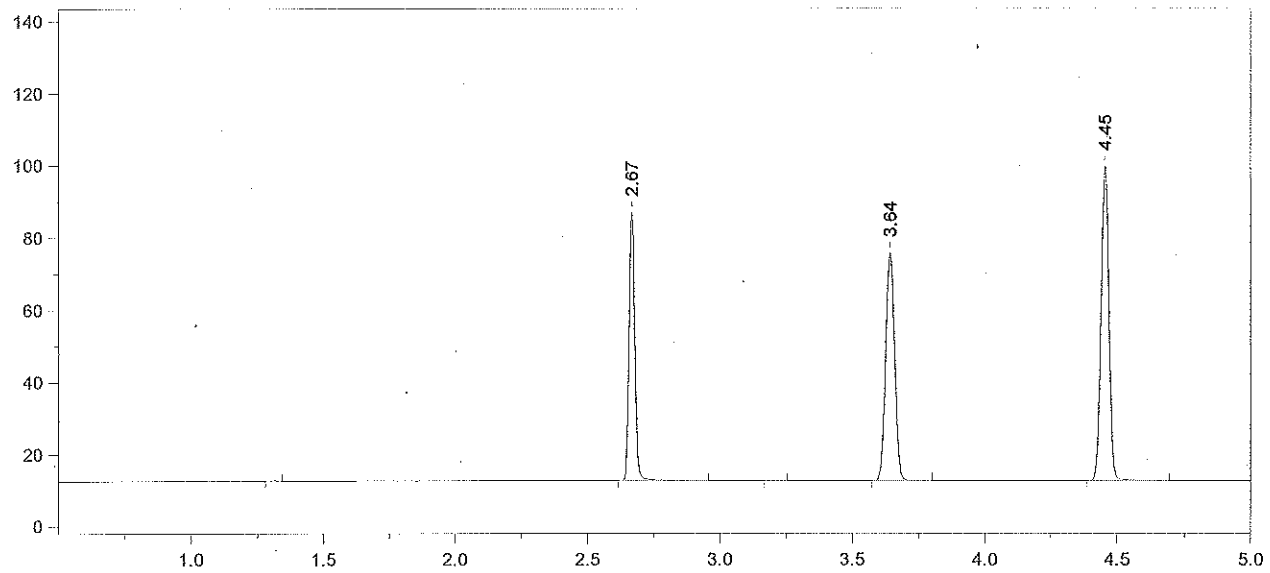
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	81207	0.0869 ✓	0.0710
4	3.64	t-Butanol	142262	1.0150	0.8284
5	4.45	n-Propanol	180220	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012 Today's Time = 2:57:34 PM
Bound File Name = SIM07052012.0011.RAW
Sample Name = CCS
Date Taken = 7/5/2012 2:57:25 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

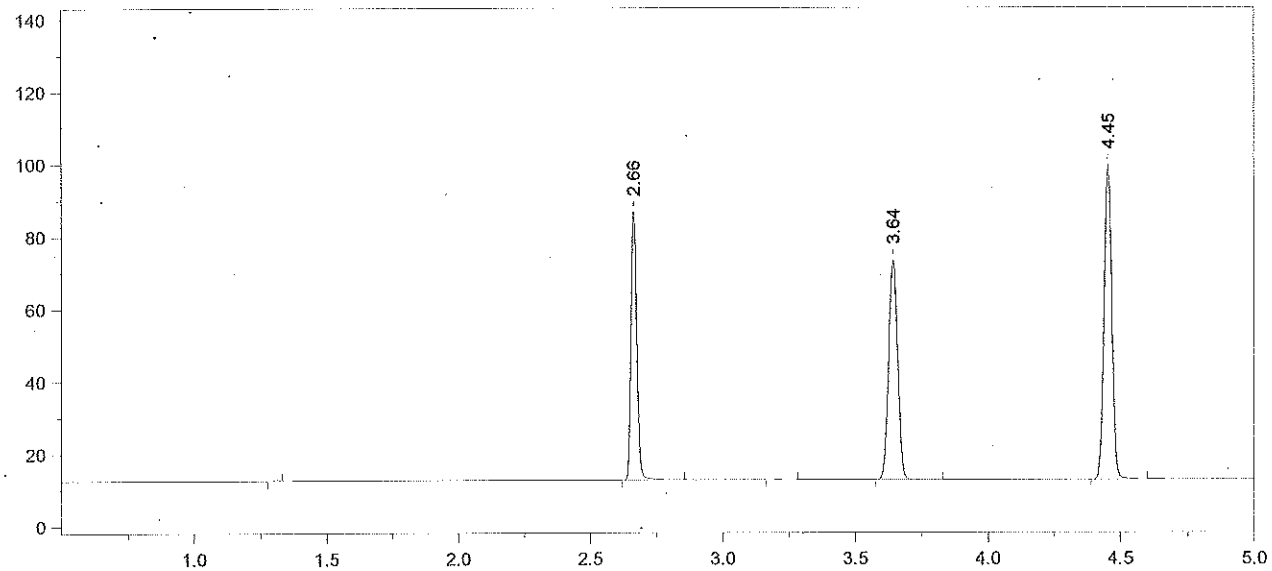
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	86312	0.0891	0.0727
4	3.64	t-Butanol	141066	0.9704	0.7921
5	4.45	n-Propanol	186907	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 3:15:07 PM
Bound File Name = SIM07052012.0012.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 3:15:01 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	114168	0.1199	0.0979
4	3.64	t-Butanol	145586	1.0192	0.8318
5	4.45	n-Propanol	183670	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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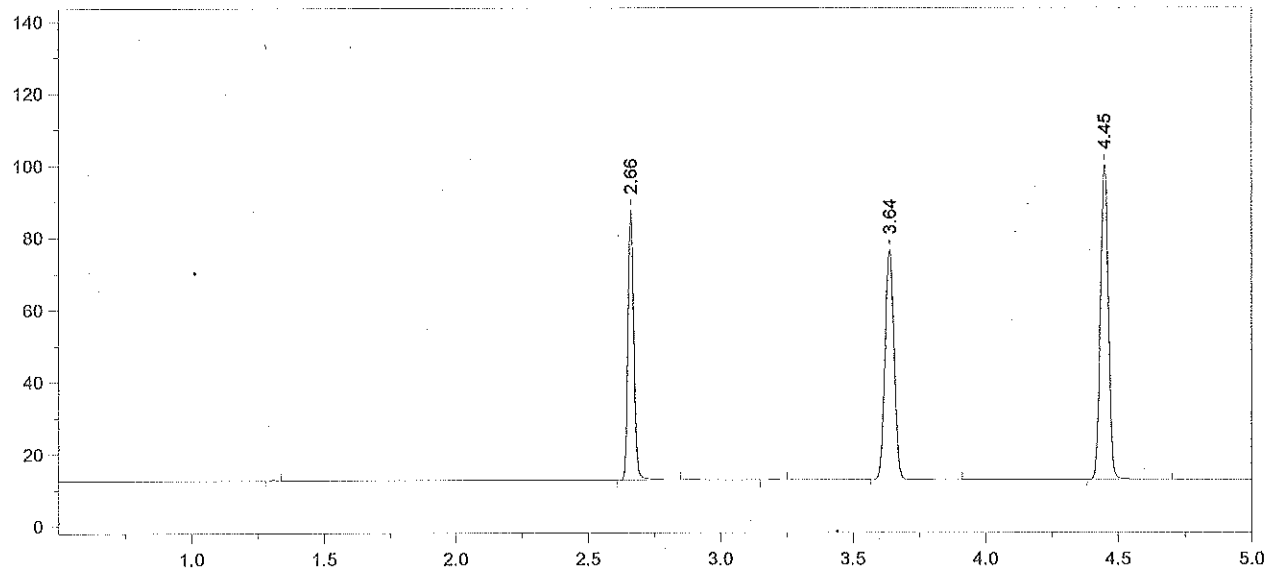
Today's Time = 3:28:24 PM
Bound File Name = SIM07052012.0013.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 3:28:12 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

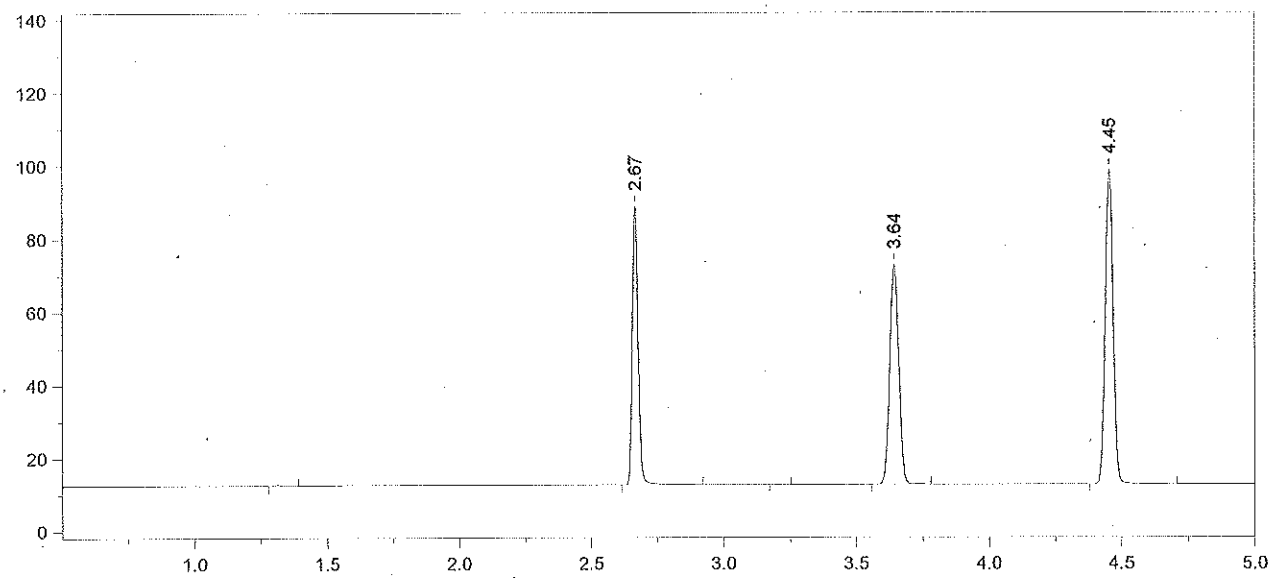
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	114842	0.1210	0.0988
4	3.64	t-Butanol	139873	0.9824	0.8019
5	4.45	n-Propanol	183061	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 3:46:36 PM
Bound File Name = SIM07052012.0014.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 3:46:26 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	114360	0.1190	0.0971
4	3.64	t-Butanol	147576	1.0232	0.8351
5	4.45	n-Propanol	185442	1.0000	0.8162



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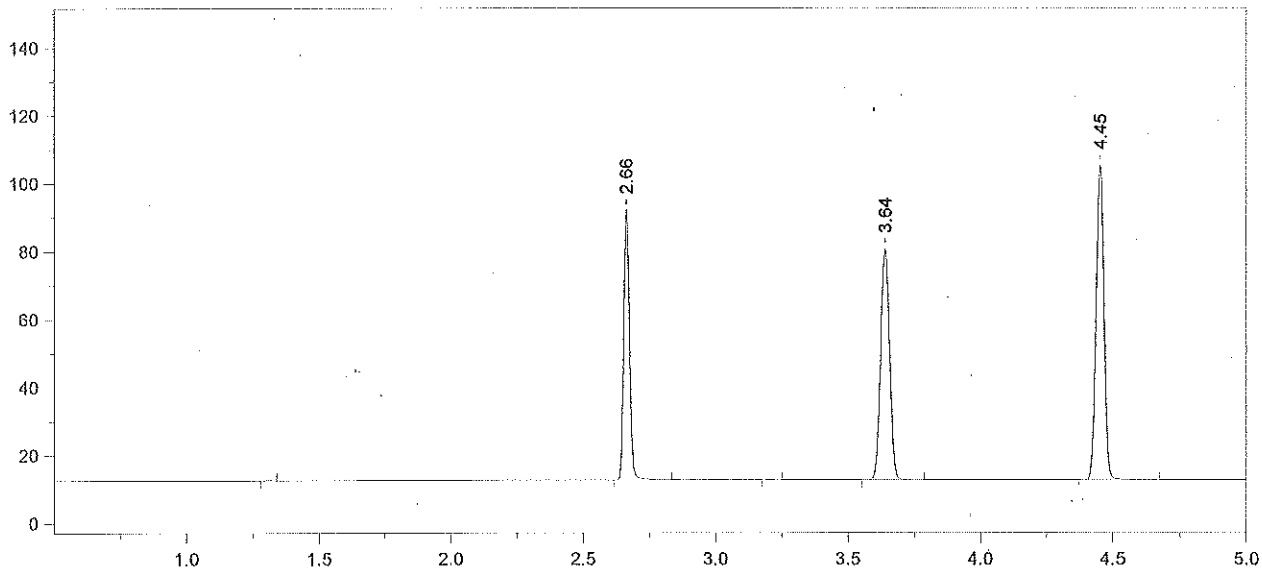
Today's Date = 7/5/2012
Today's Time = 4:00:22 PM
Bound File Name = SIM07052012.0015.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 4:00:11 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	116674	0.1231	0.1004
4	3.64	t-Butanol	138306	0.9723	0.7936
5	4.45	n-Propanol	182904	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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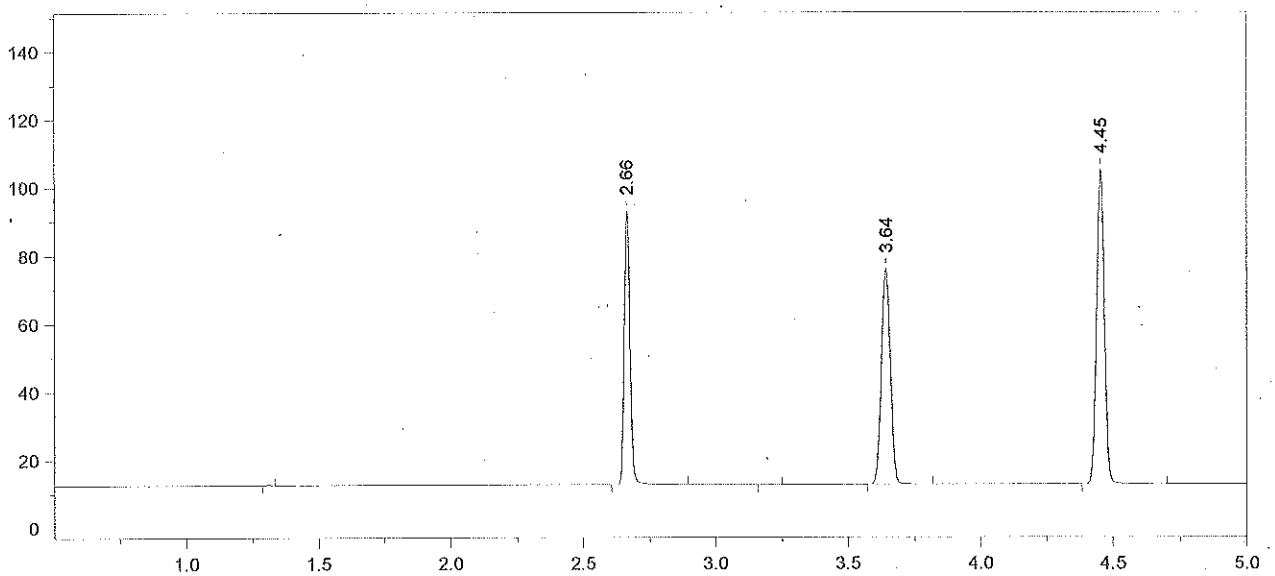
Today's Time = 4:17:55 PM
Bound File Name = SIM07052012.0016.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 4:17:48 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	120902	0.1183	0.0966
4	3.64	t-Butanol	156389	1.0200	0.8325
5	4.45	n-Propanol	197138	1.0000	0.8162



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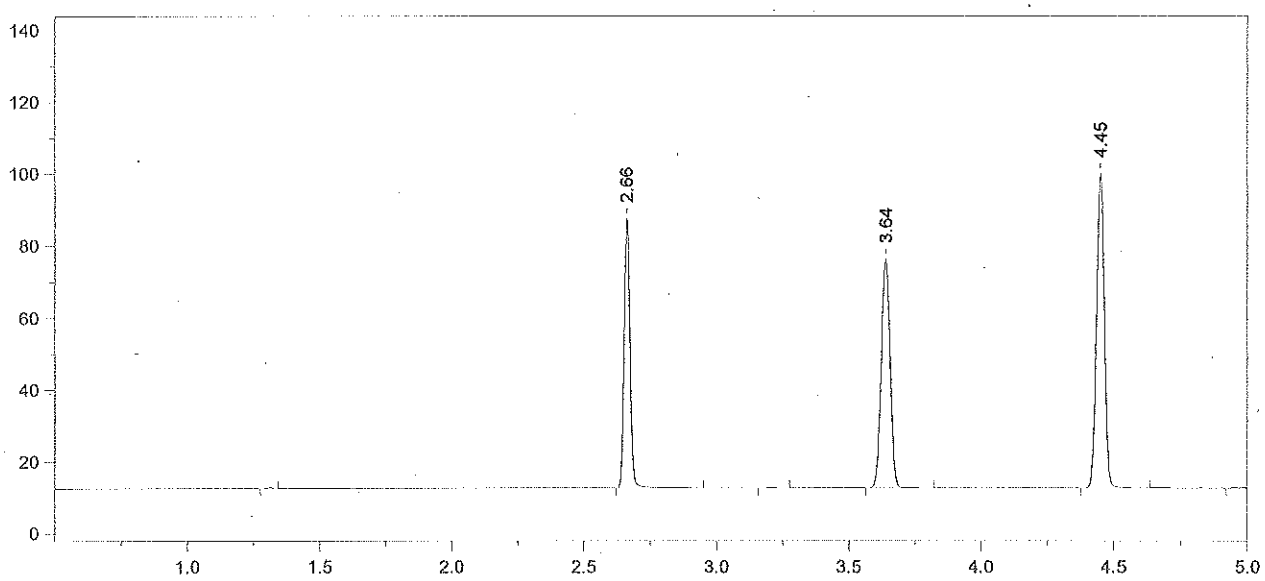
Today's Time = 4:31:17 PM
Bound File Name = SIM07052012.0017.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 4:31:06 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

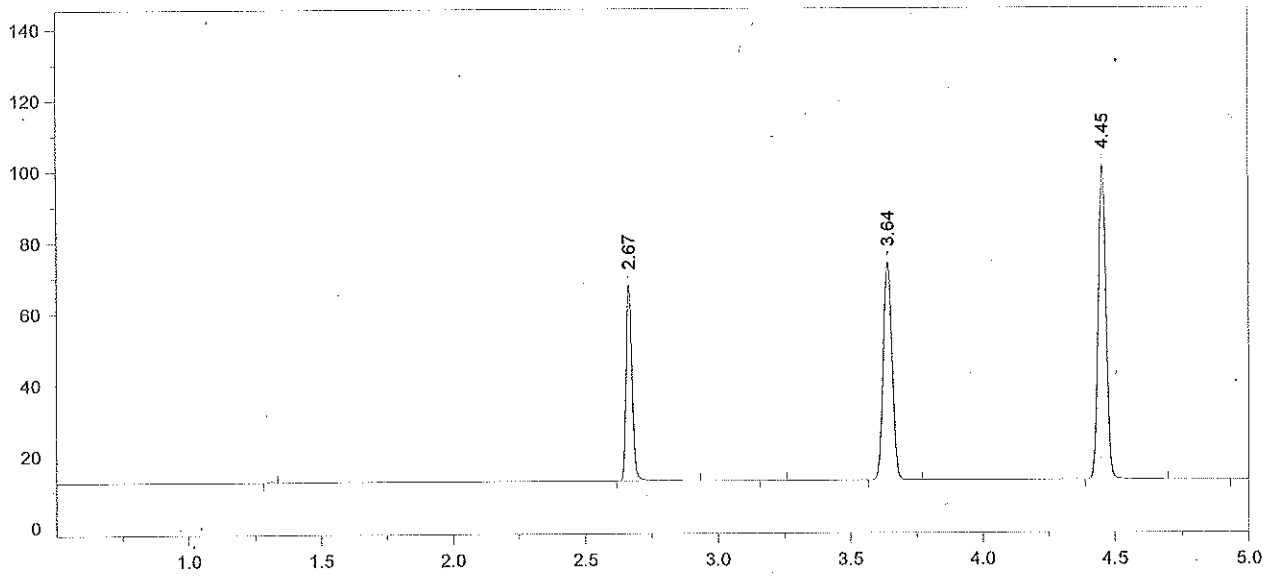
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	124323	0.1227	0.1002
4	3.64	t-Butanol	146441	0.9636	0.7865
5	4.45	n-Propanol	195398	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 4:49:22 PM
Bound File Name = SIM07052012.0018.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/5/2012 4:49:15 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

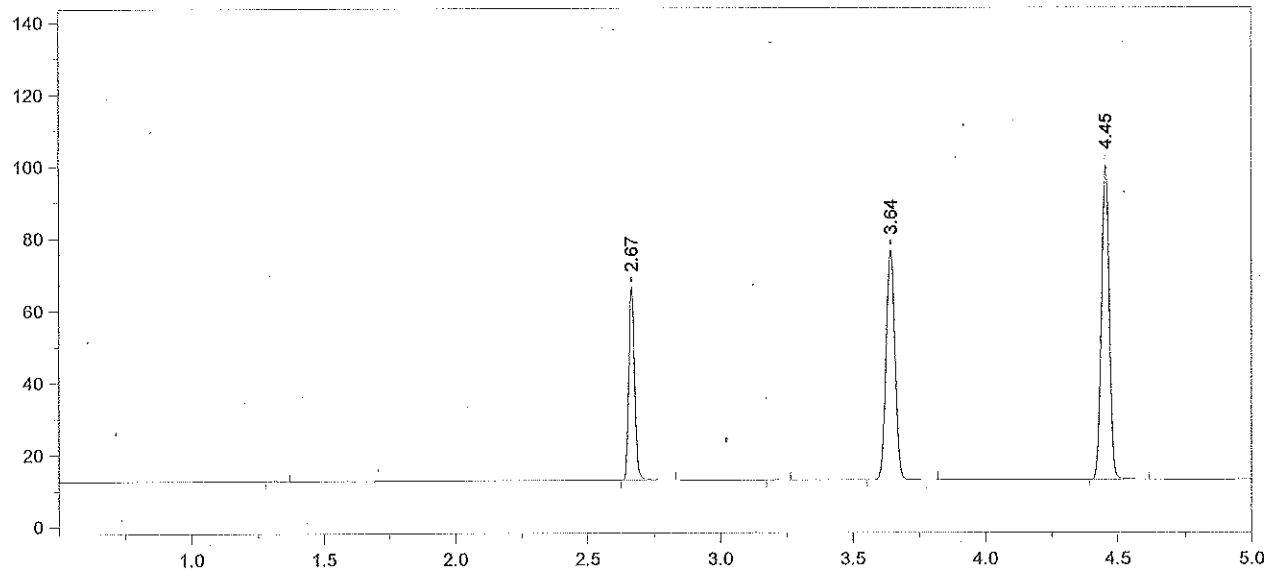
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115594	0.1209	0.0986
4	3.64	t-Butanol	147347	1.0267	0.8380
5	4.45	n-Propanol	184530	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 5:03:03 PM
Bound File Name = SIM07052012.0019.RAW
Sample Name = CCS
Date Taken = 7/5/2012 5:02:55 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

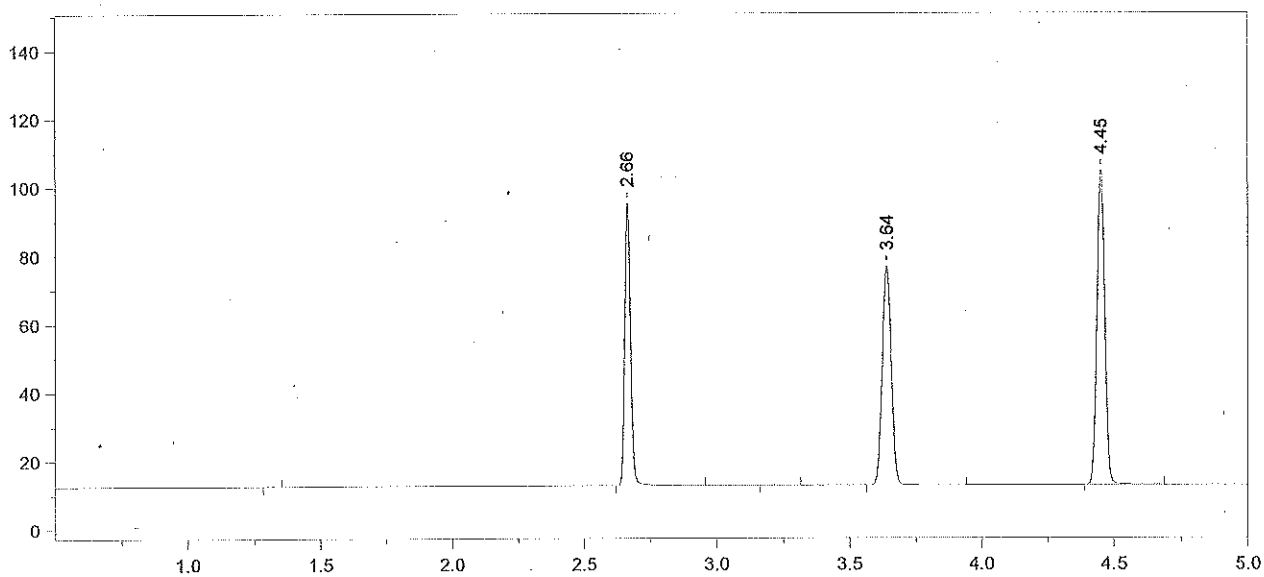
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	86025	0.0888	0.0725
4	3.64	t-Butanol	141431	0.9735	0.7945
5	4.45	n-Propanol	186804	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 5:20:45 PM
Bound File Name = SIM07052012.0020.RAW
Sample Name = CCS
Date Taken = 7/5/2012 5:20:39 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

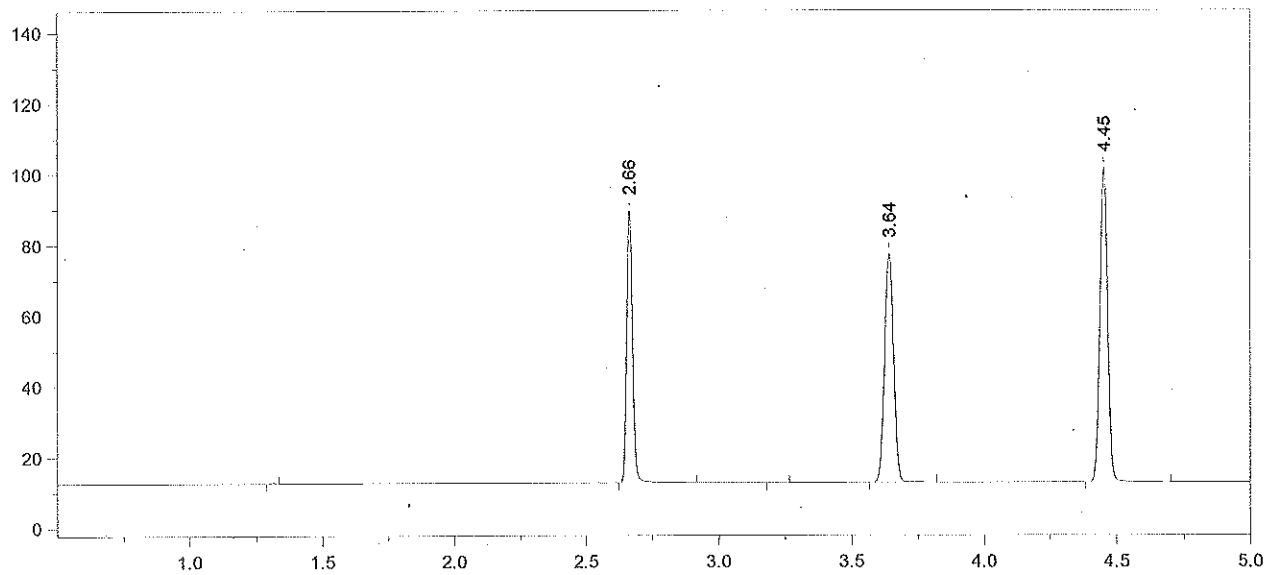
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	82579	0.0863 ✓	0.0705
4	3.64	t-Butanol	146951	1.0240	0.8358
5	4.45	n-Propanol	184514	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 5:34:33 PM
Bound File Name = SIM07052012.0021.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 5:34:25 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

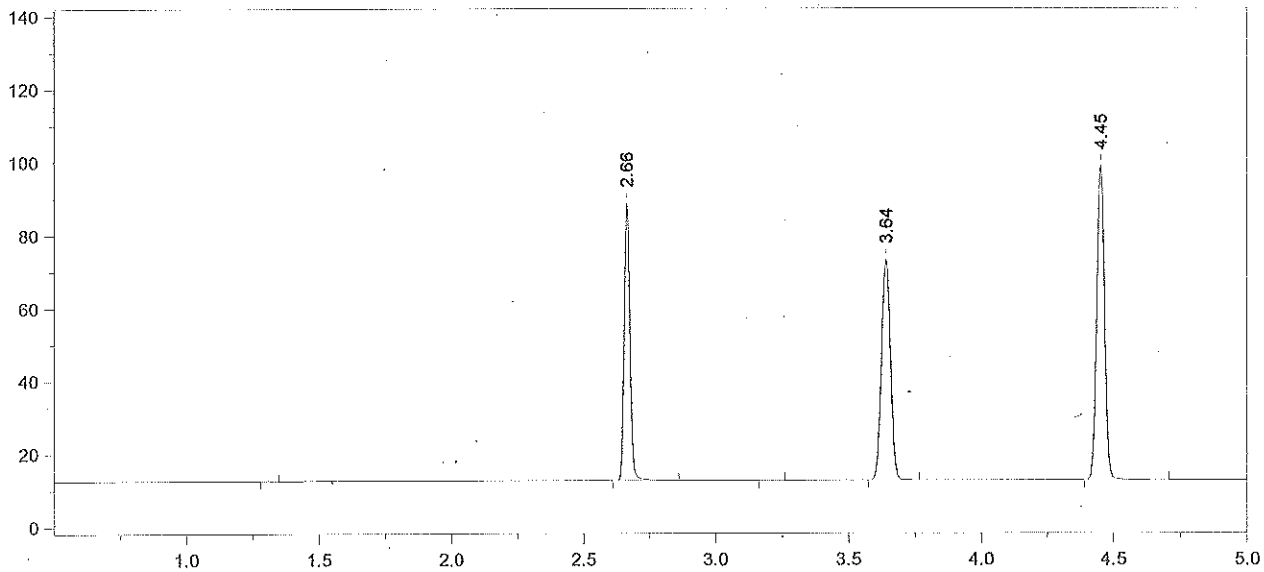
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	126664	0.1248	0.1019
4	3.64	t-Butanol	147815	0.9707	0.7923
5	4.45	n-Propanol	195784	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 5:52:15 PM
Bound File Name = SIM07052012.0022.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 5:52:04 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

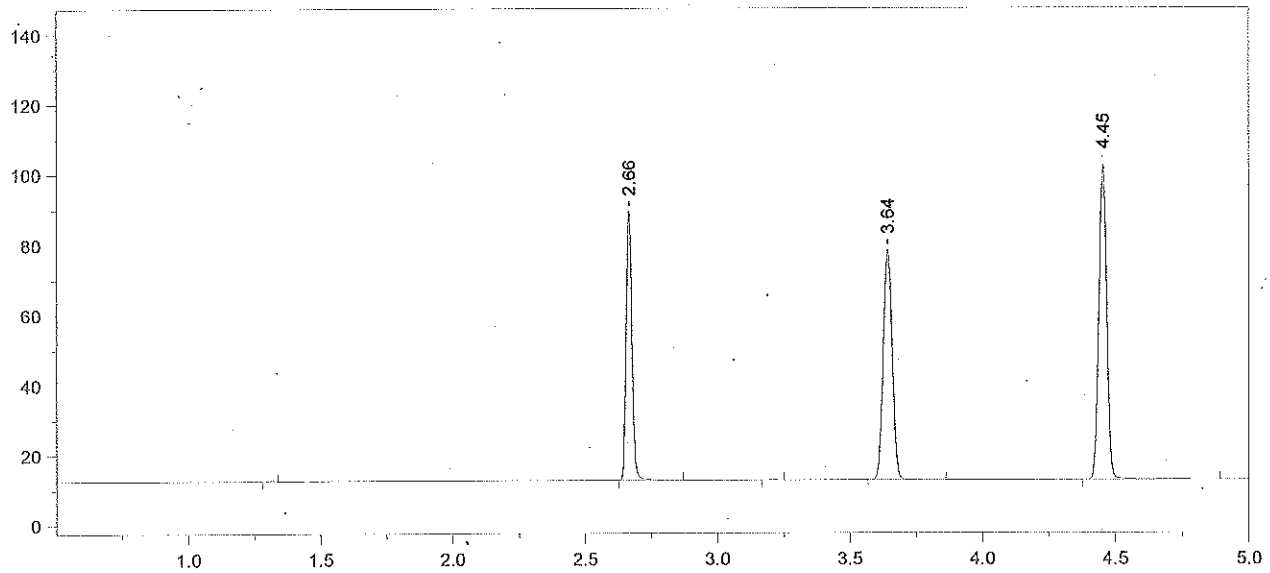
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	118318	0.1216	0.0992
4	3.64	t-Butanol	149699	1.0250	0.8366
5	4.45	n-Propanol	187783	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 6:05:25 PM
Bound File Name = SIM07052012.0023.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 6:05:19 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

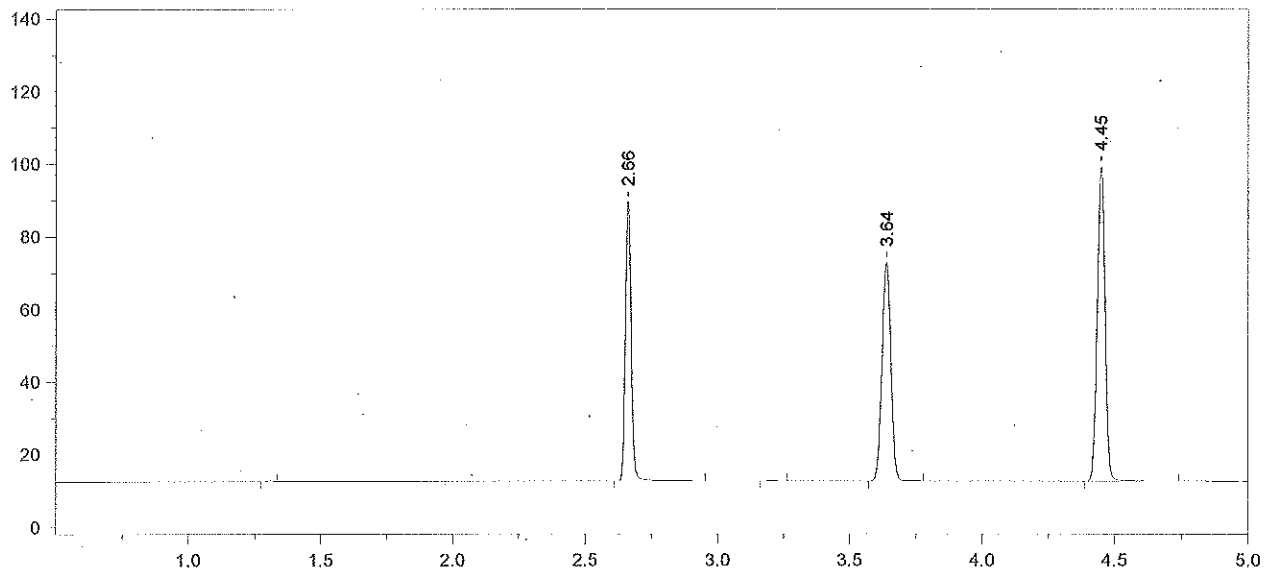
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	116204	0.1226	0.1001
4	3.64	t-Butanol	139796	0.9833	0.8026
5	4.45	n-Propanol	182794	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 6:23:37 PM
Bound File Name = SIM07052012.0024.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 6:23:28 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

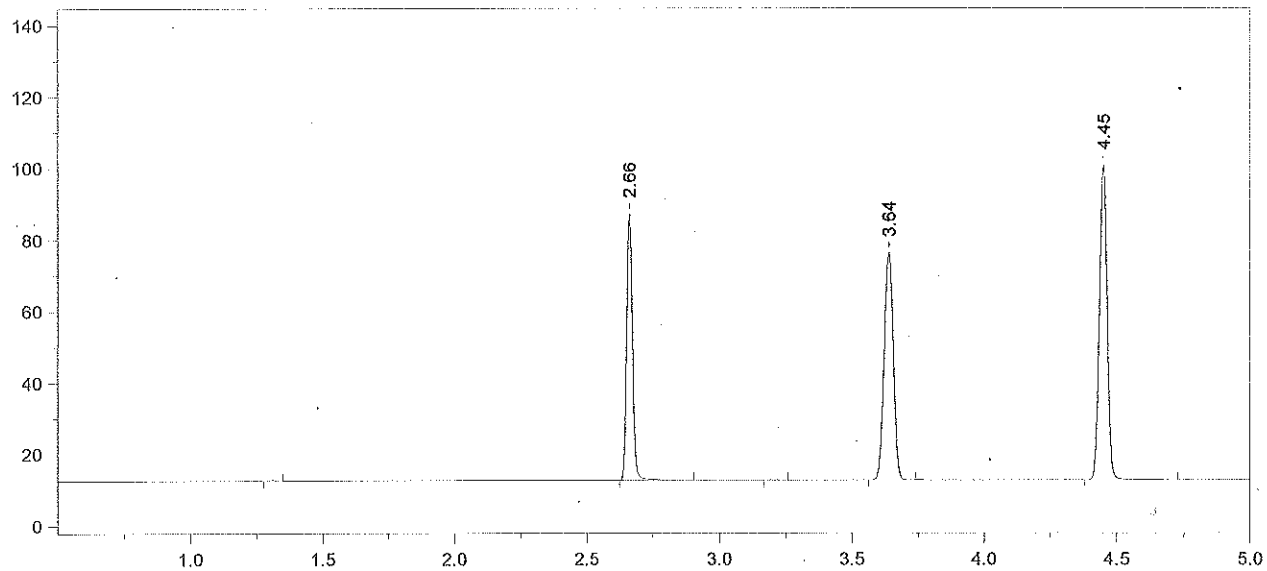
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	118510	0.1198	0.0978
4	3.64	t-Butanol	151774	1.0226	0.8347
5	4.45	n-Propanol	190828	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012 Today's Time = 6:38:29 PM
Bound File Name = SIM07052012.0025.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 6:38:24 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal Calibration Version = 7

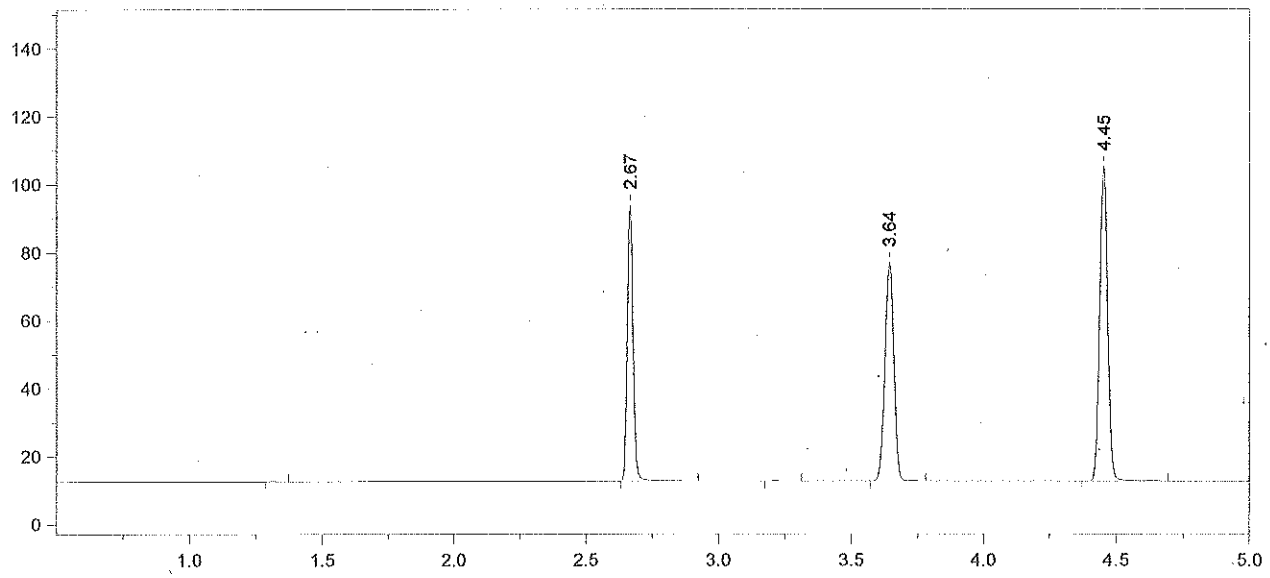
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119175	0.1252	0.1022
4	3.64	t-Butanol	139129	0.9739	0.7949
5	4.45	n-Propanol	183677	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 6:54:58 PM
Bound File Name = SIM07052012.0026.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 6:54:52 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

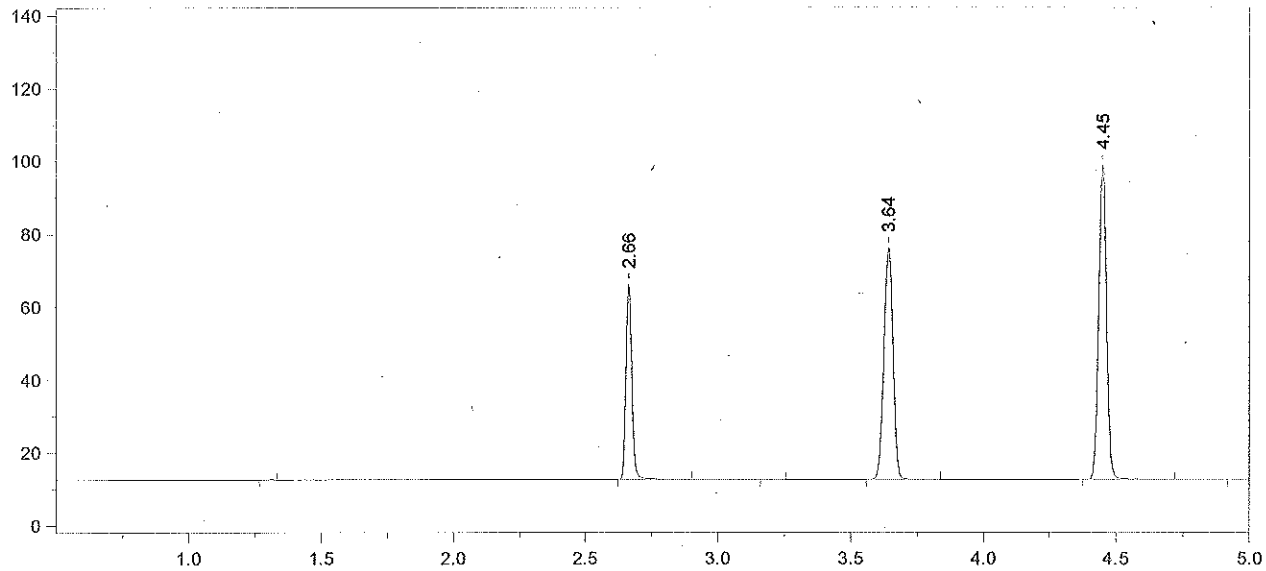
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115473	0.1197	0.0977
4	3.64	t-Butanol	147329	1.0175	0.8305
5	4.45	n-Propanol	186168	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 7:08:52 PM
Bound File Name = SIM07052012.0027.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/5/2012 7:08:42 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

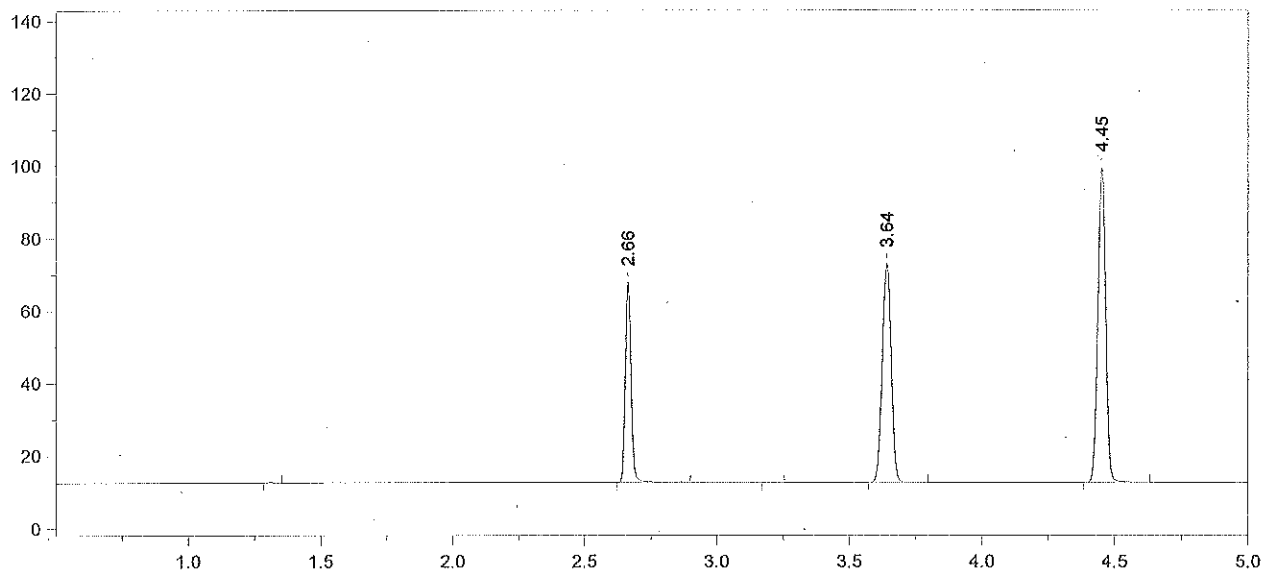
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	124636	0.1221	0.0997
4	3.64	t-Butanol	148220	0.9677	0.7899
5	4.45	n-Propanol	196929	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 7:26:23 PM
Bound File Name = SIM07052012.0028.RAW
Sample Name = CCS
Date Taken = 7/5/2012 7:26:16 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	82681	0.0866	0.0707
4	3.64	t-Butanol	146852	1.0249	0.8365
5	4.45	n-Propanol	184236	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/5/2012
Today's Time = 7:40:06 PM
Bound File Name = SIM07052012.0029.RAW
Sample Name = CCS
Date Taken = 7/5/2012 7:39:57 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07052012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	85506	0.0893	0.0729
4	3.64	t-Butanol	139727	0.9728	0.7940
5	4.45	n-Propanol	184688	1.0000	0.8162

Headspace Alcohol Analysis Standards Coversheet

Analyst: ALB Date: 7/9/12

Calibration Standards:

Lot ID: ES-05102012 Preparation Date: 05/10/2012 Expiration Date: 08/10/2012

	Standard A	Standard B	Standard C	Standard D	Standard E	Calibration Check
% Ethanol (w/v)	0.006	0.023	0.087	0.211	0.414	
Acceptance Range (± 10%)	0.007	0.025	0.096	0.232	0.455	
	0.005	0.021	0.078	0.190	0.372	

Control Sample:

Sample	Source	Lot number	Target Value	Acceptance Range	
Aqueous	Cerilliant	~~FN111711-01~~	~~0.100~~	~~0.110~~	~~0.090~~ ALB 7/9/12
		FN021111-03	0.080	0.072	0.088

Calibration and Control Sample Data:

Vial No.	Sample Identification		Result	In Range?	Comments
1	Blank		<0.005	Y N	
2	Compound Retention Times:			N/A	
		Acetaldehyde	1.92		
		Methanol	2.02		
		Ethanol	2.66		
		Acetone	3.07		
		Isopropanol	3.20		
		T- butanol	3.64		
		n-propanol	4.45		
3	Standard A		0.006	Y N	
4	Standard B		0.023	Y N	
5	Standard C		0.088	Y N	
6	Standard D		0.210	Y N	
7	Standard E		0.414	Y N	
8	Aqueous QC		0.0786	Y N	
9	Aqueous QC		0.0804	Y N	$\bar{x}$ = 0.079 ✓ 99.4% recovery

7/9/2012

File Name: C:\Methods\SimCal 07062012.cal
Version: 7

QC Gillian
FN021111-03
0.080

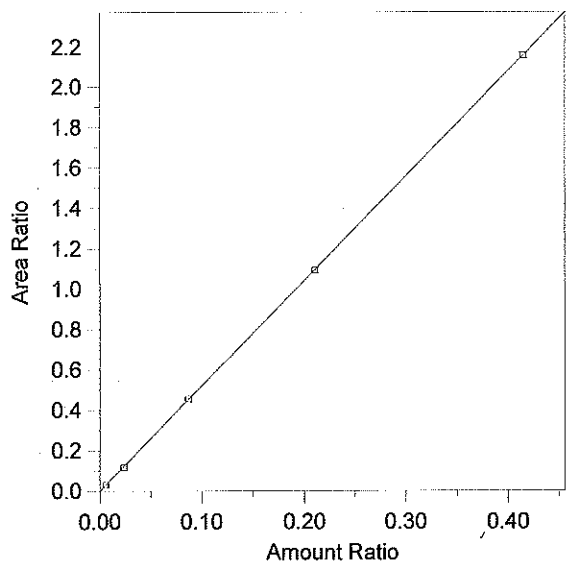
Creator:
Description:
Reason for change:

Internal standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 1000
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

3 Ethanol



Expected retention time:	2.669 minutes
Search window:	0.1 minutes
Internal standard component:	7 (n-Propanol)
No retention time reference component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

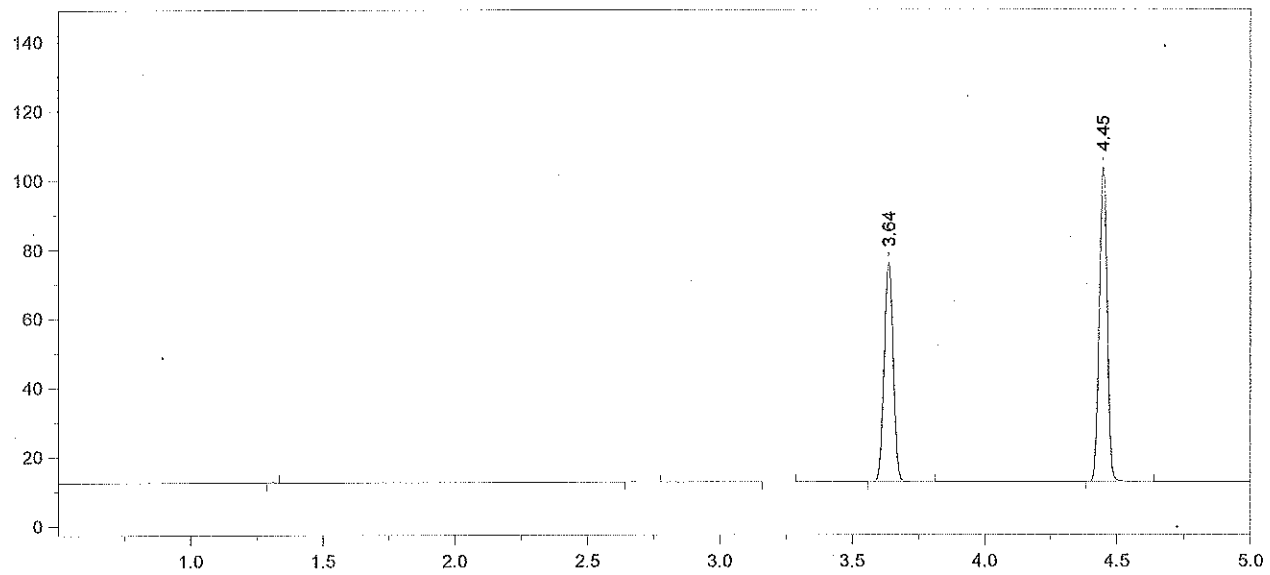
Single peak quantification by area

Y = 5.199261 X + 0

Linear fit with equal weighting, forced to origin

Coefficient of determination:	0.9999844
Average error:	1.420%
Average CF:	5.147096
RSD:	1.885%

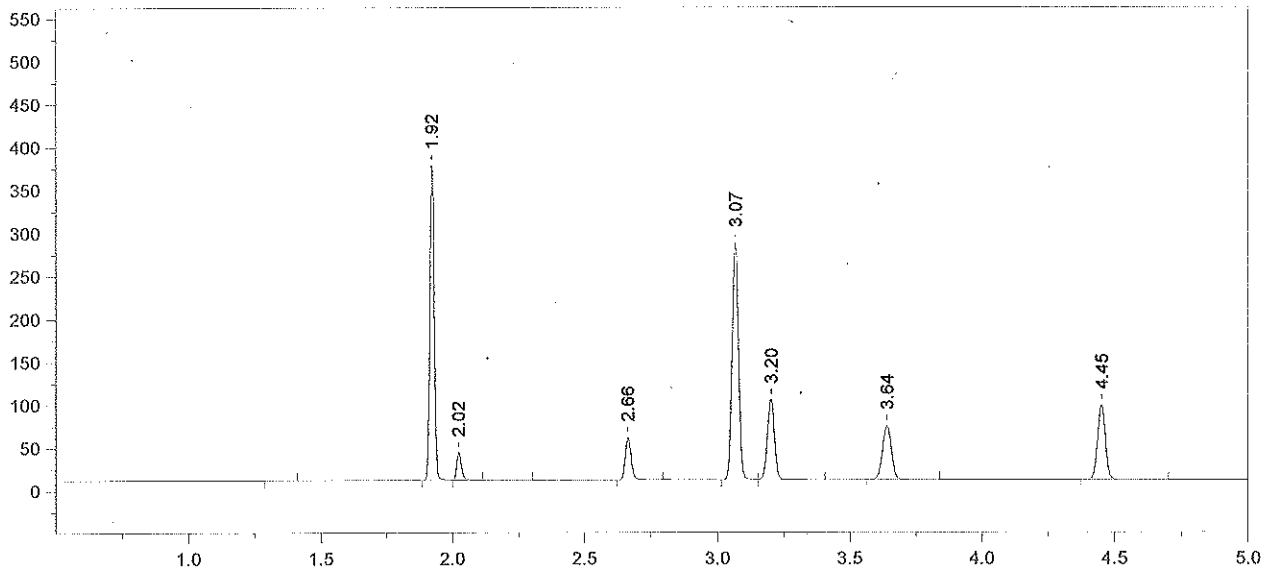
Level	Amount	Response	Cal Factor	Error, %	Amount Ratio	Response Ratio	Source	Date and time
1	(0.081)	(85146)	--	--	0.081	85146	Manual	5/11/2012 8:03:03 AM
2	0.0059	5549.547	940601.1	-2.216	0.0059	2.999586E-02	C:\Alcohol Data\SIM07062012\SIM07062012.0003.BND	7/6/2012 11:57:36 AM
3	0.0235	22101.98	940509.8	-3.601	0.0235	0.1177824	C:\Alcohol Data\SIM07062012\SIM07062012.0004.BND	7/6/2012 12:15:21 PM
4	0.0869	87150.21	1002879	1.012	0.0869	0.4563899	C:\Alcohol Data\SIM07062012\SIM07062012.0005.BND	7/6/2012 12:29:23 PM
5	0.2107	217080.9	1030284	-0.242	0.2107	1.092839	C:\Alcohol Data\SIM07062012\SIM07062012.0006.BND	7/6/2012 12:46:48 PM
6	0.4144	413054.1	996752.1	0.030	0.4144	2.15522	C:\Alcohol Data\SIM07062012\SIM07062012.0007.BND	7/6/2012 1:00:02 PM



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012 Today's Time = 8:05:35 AM
Bound File Name = SIM07062012.0001.RAW
Sample Name = Blank
Date Taken = 7/6/2012 11:26:31 AM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal Calibration Version = 7

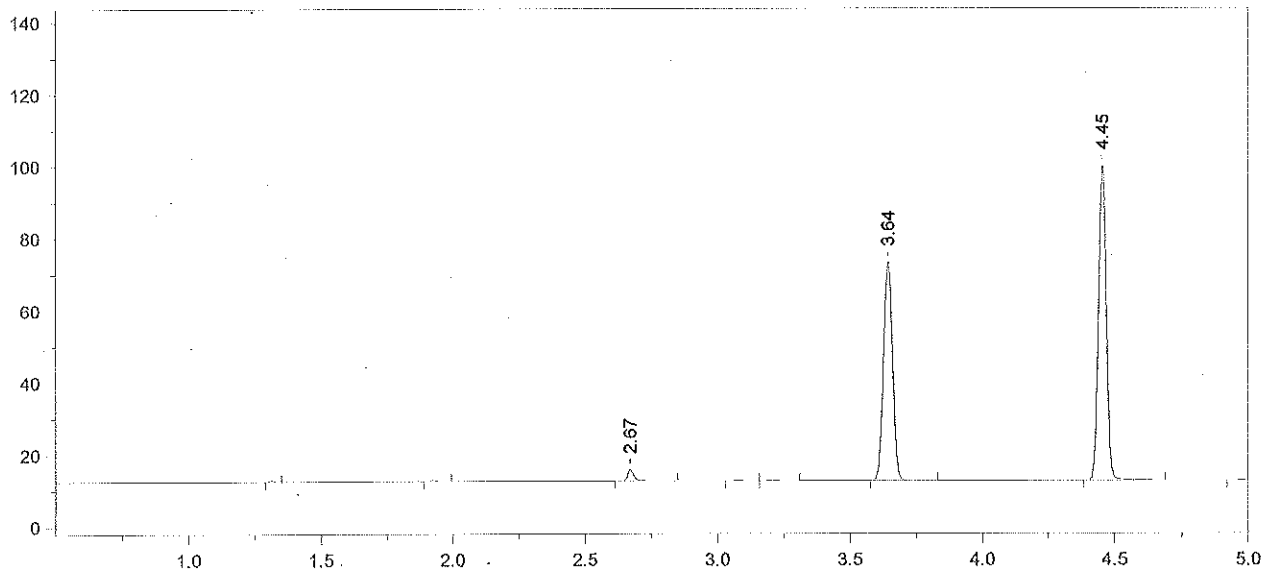
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
4	3.64	t-Butanol	146226	0.9780	0.7982
5	4.45	n-Propanol	193182	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012 Today's Time = 8:05:44 AM
Bound File Name = SIM07062012.0002.RAW
Sample Name = TMX
Date Taken = 7/6/2012 11:43:52 AM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal Calibration Version = 7

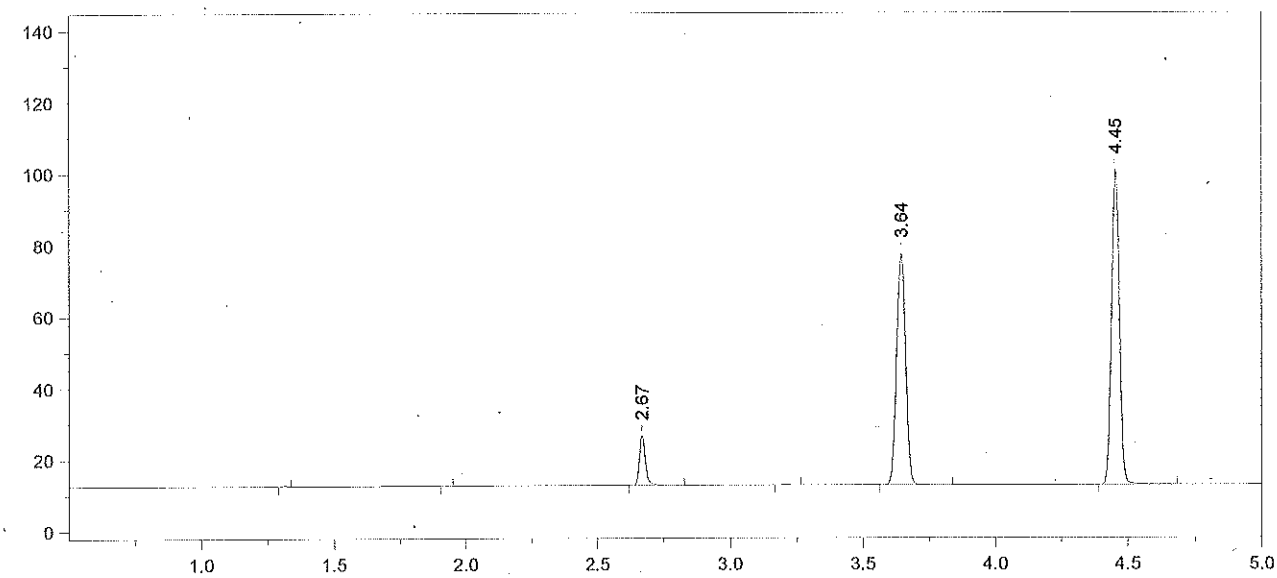
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	1.92	Acetaldehyde	424538	0.0900	0.0735
3	2.02	Methanol	39201	0.0920	0.0751
4	2.66	Ethanol	75817	0.0798	0.0651
5	3.07	Acetone	466950	0.0920	0.0751
6	3.20	Isopropanol	175252	0.1230	0.1004
7	3.64	t-Butanol	144781	1.0233	0.8352
8	4.45	n-Propanol	182800	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012
Today's Time = 8:05:53 AM
Bound File Name = SIM07062012.0003.RAW
Sample Name = STD A
Date Taken = 7/6/2012 11:57:30 AM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

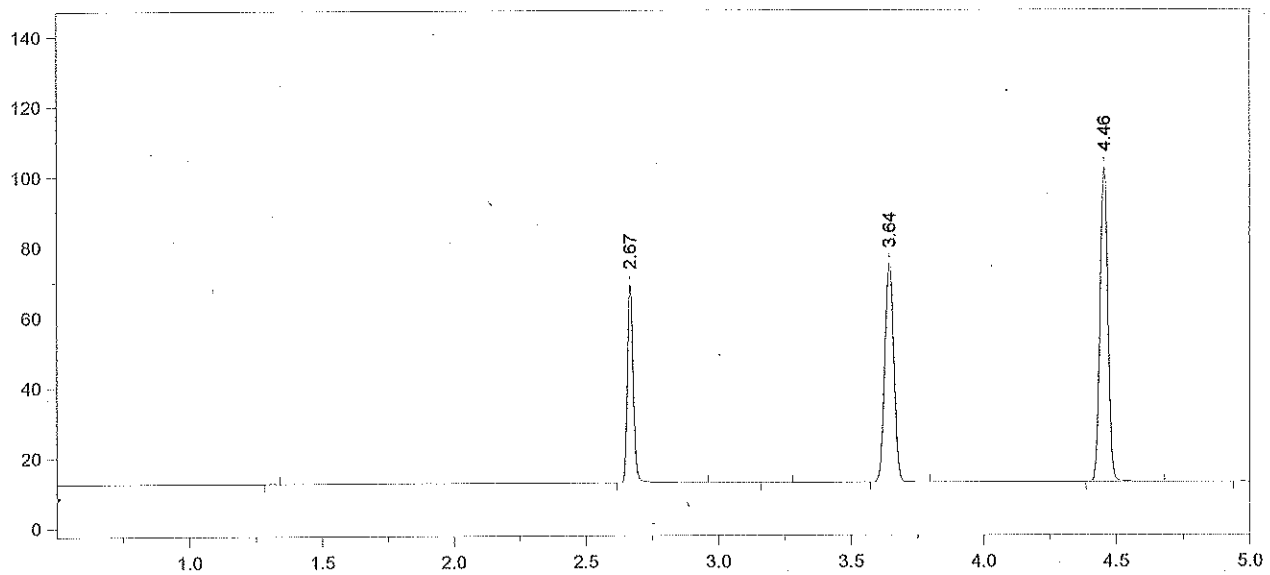
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	05550	0.0058	0.0047
6	3.64	t-Butanol	139970	0.9775	0.7978
7	4.45	n-Propanol	185010	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012
Today's Time = 8:06:01 AM
Bound File Name = SIM07062012.0004.RAW
Sample Name = STD B
Date Taken = 7/6/2012 12:15:16 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

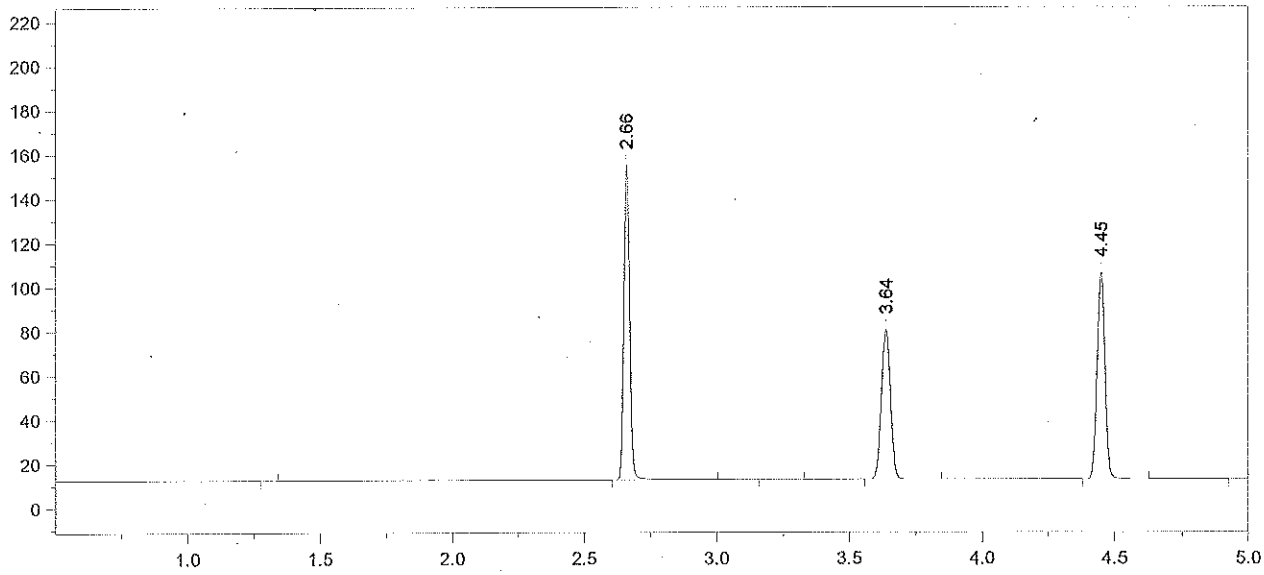
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	22102	0.0227	0.0185
5	3.64	t-Butanol	149371	1.0285	0.8394
6	4.45	n-Propanol	187651	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012
Today's Time = 8:06:10 AM
Bound File Name = SIM07062012.0005.RAW
Sample Name = STD C
Date Taken = 7/6/2012 12:29:12 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

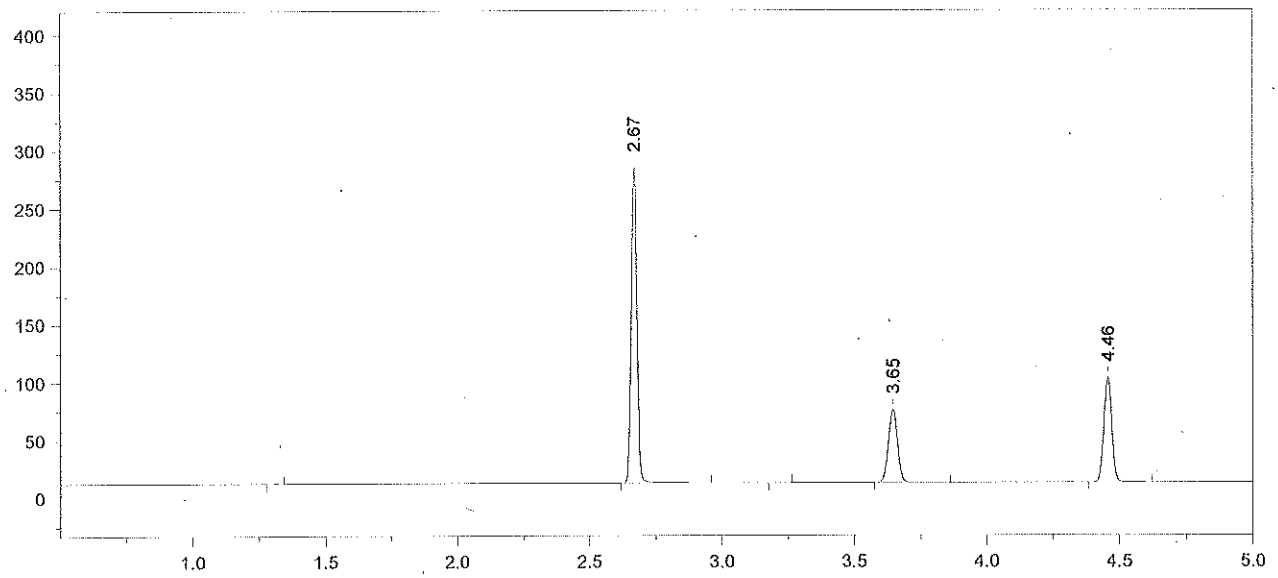
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	87150	0.0878	0.0716
4	3.64	t-Butanol	143940	0.9739	0.7949
5	4.46	n-Propanol	190956	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012
Today's Time = 8:06:18 AM
Bound File Name = SIM07062012.0006.RAW
Sample Name = STD D
Date Taken = 7/6/2012 12:46:41 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

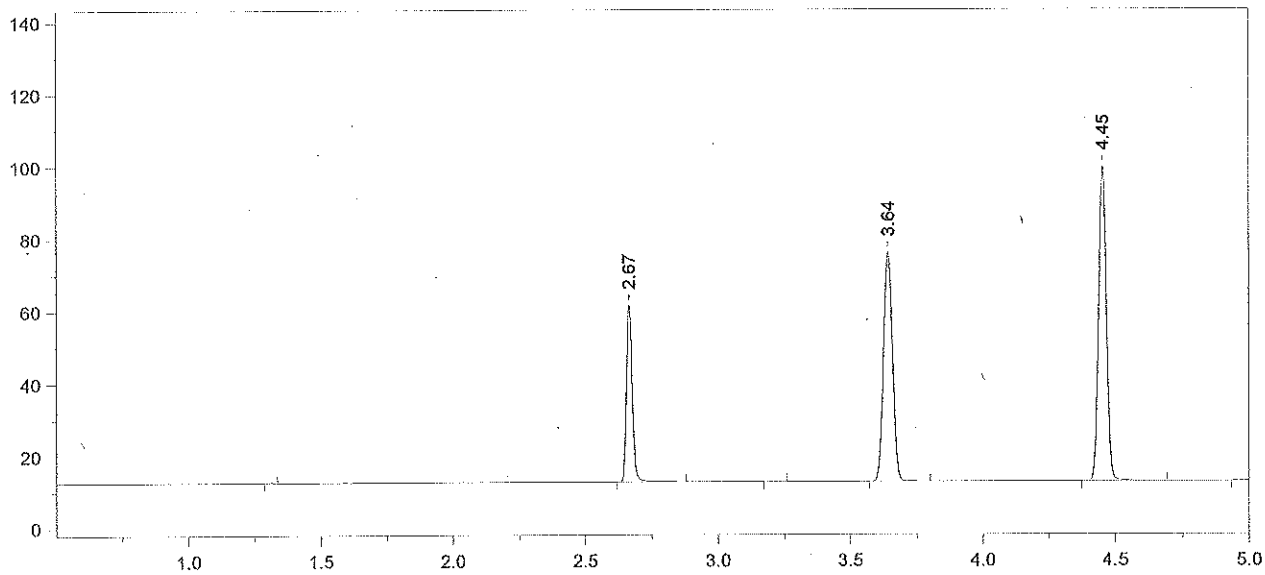
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	217081	0.2102	0.1716
4	3.64	t-Butanol	156844	1.0202	0.8327
5	4.45	n-Propanol	198640	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/9/2012
Today's Time = 8:06:26 AM
Bound File Name = SIM07062012.0007.RAW
Sample Name = STD E
Date Taken = 7/6/2012 12:59:54 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

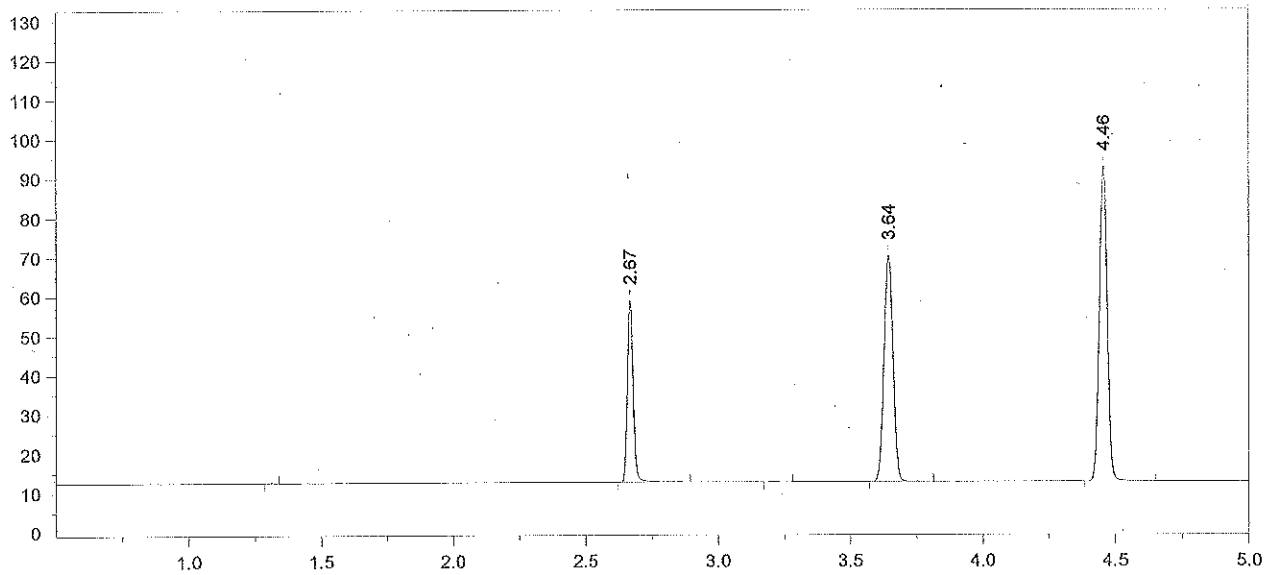
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	413054	0.4145	0.3383
4	3.65	t-Butanol	144877	0.9767	0.7972
5	4.46	n-Propanol	191653	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 1:18:18 PM
Bound File Name = SIM07062012.0008.RAW
Sample Name = AQ QC
Date Taken = 7/6/2012 1:18:05 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

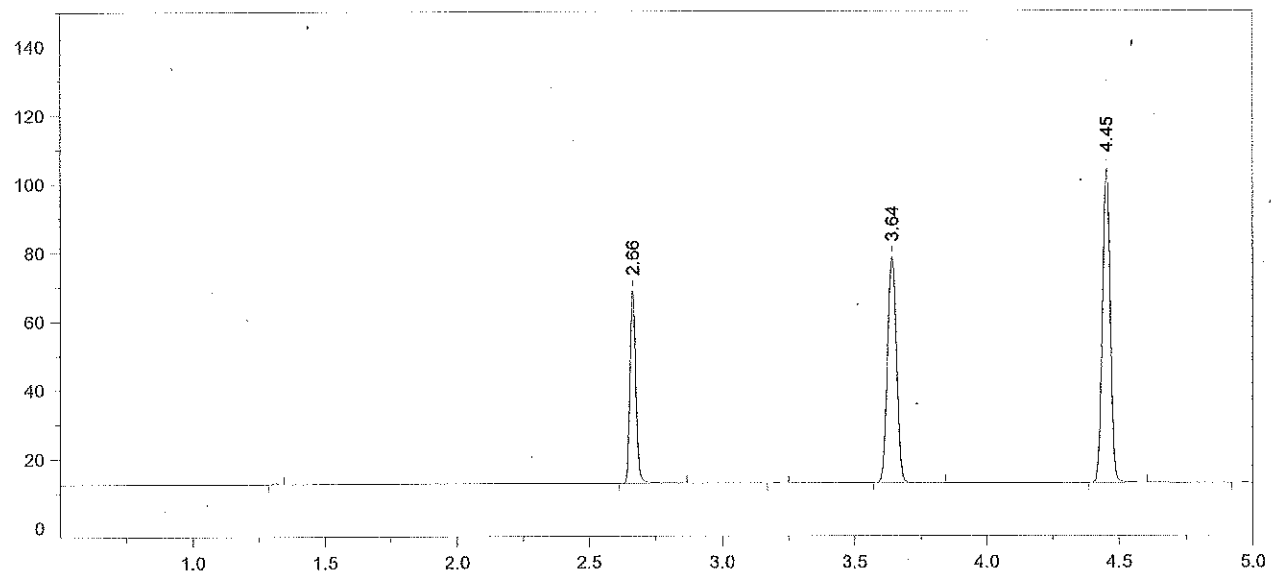
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	75540	0.0786	0.0641
4	3.64	t-Butanol	145981	1.0200	0.8325
5	4.45	n-Propanol	184917	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 1:33:07 PM
Bound File Name = SIM07062012.0009.RAW
Sample Name = AQ QC
Date Taken = 7/6/2012 1:32:59 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

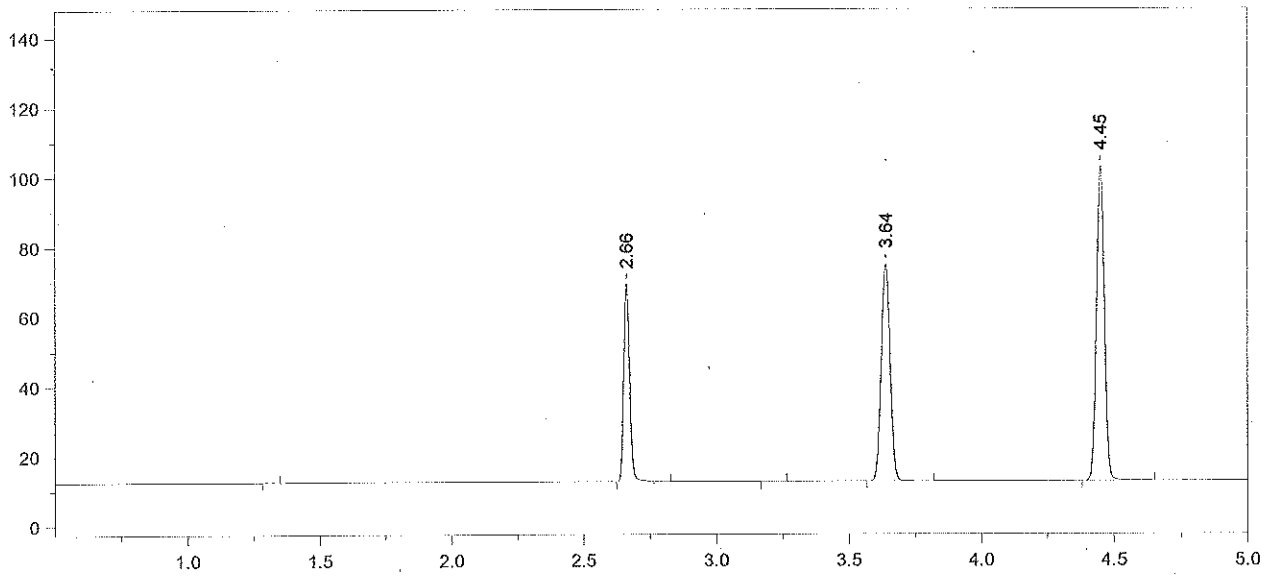
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	71330	0.0804	0.0656
4	3.64	t-Butanol	132756	1.0054	0.8206
5	4.46	n-Propanol	170596	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 1:47:58 PM
Bound File Name = SIM07062012.0010.RAW
Sample Name = CCS
Date Taken = 7/6/2012 1:47:47 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

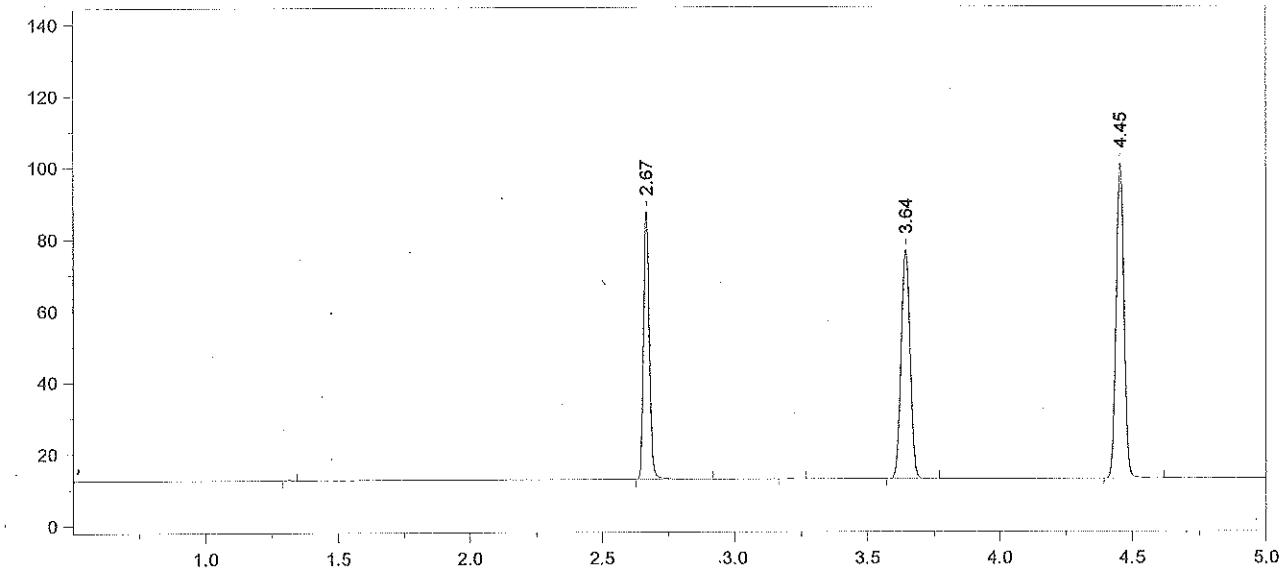
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	86848	0.0864	0.0706
4	3.64	t-Butanol	152787	1.0216	0.8338
5	4.45	n-Propanol	193229	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 2:03:21 PM
Bound File Name = SIM07062012.0011.RAW
Sample Name = CCS
Date Taken = 7/6/2012 2:03:10 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

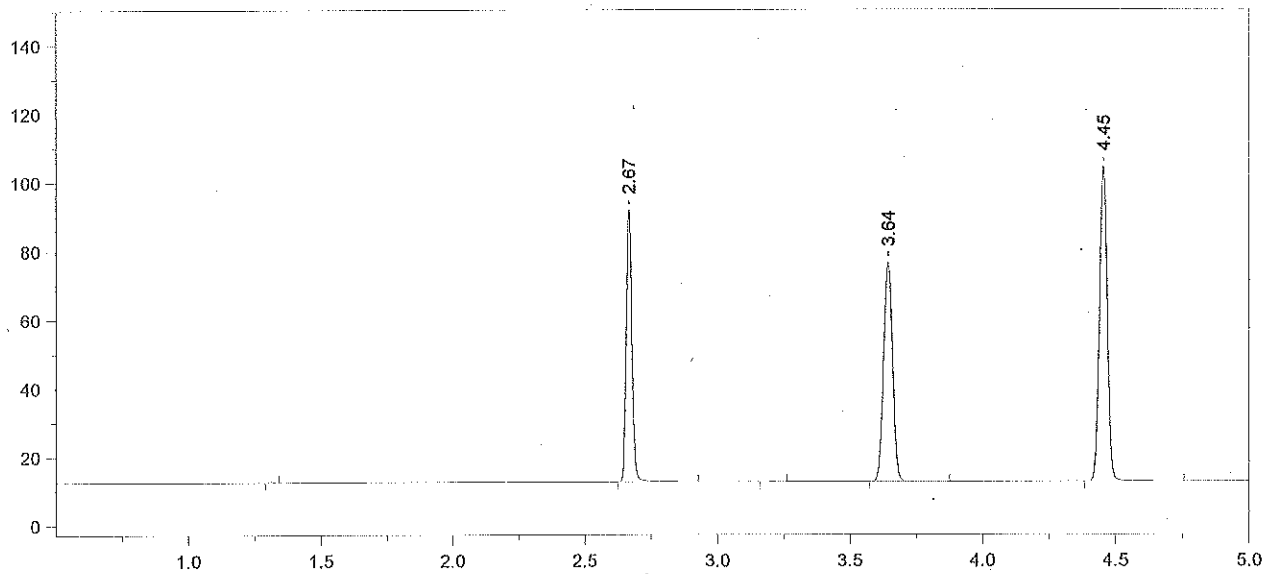
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	87682	0.0884	0.0721
4	3.64	t-Butanol	144034	0.9753	0.7960
5	4.45	n-Propanol	190808	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 2:19:26 PM
Bound File Name = SIM07062012.0012.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 2:19:19 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

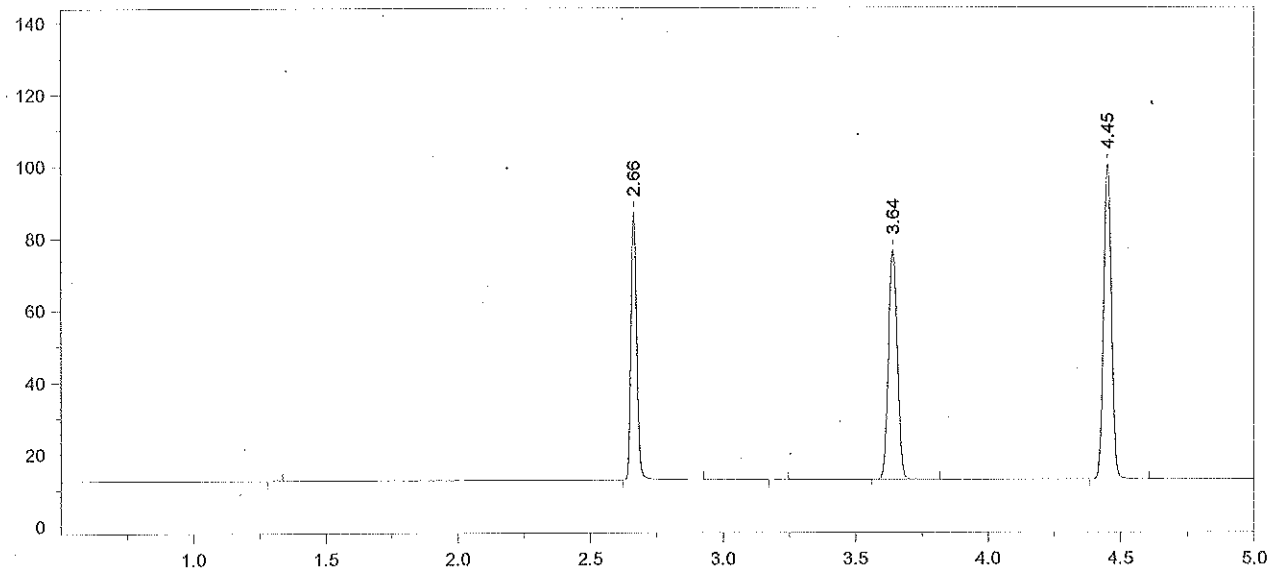
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	114704	0.1180	0.0963
4	3.64	t-Butanol	147593	1.0202	0.8327
5	4.45	n-Propanol	186920	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 2:32:58 PM
Bound File Name = SIM07062012.0013.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 2:32:49 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

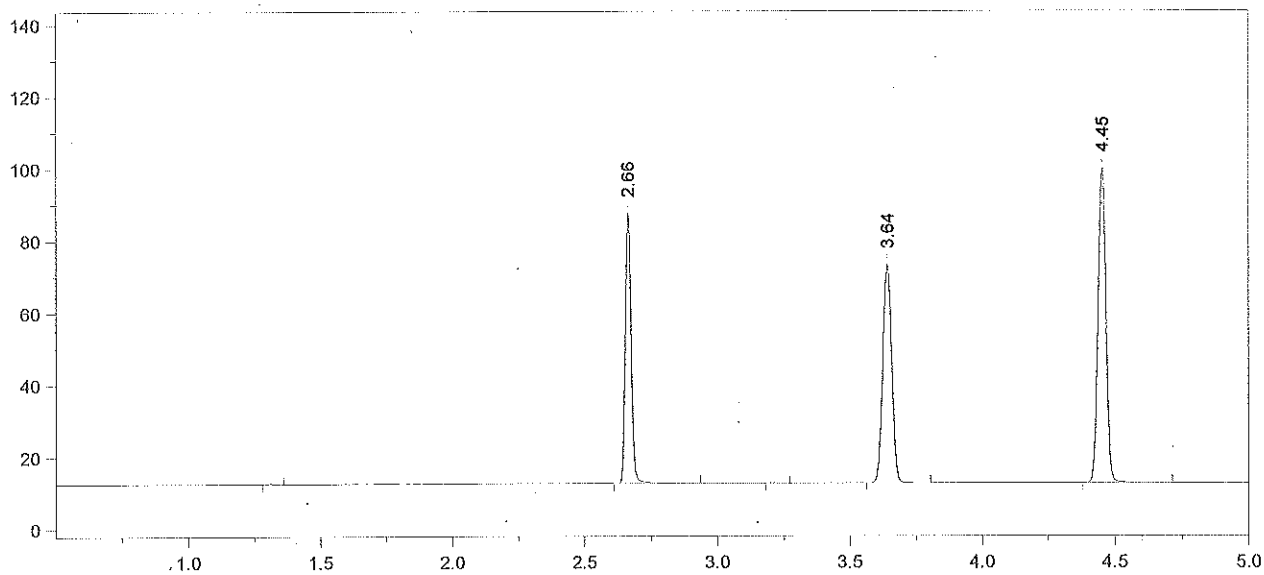
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	121886	0.1205	0.0983
4	3.64	t-Butanol	147535	0.9795	0.7994
5	4.45	n-Propanol	194617	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 2:50:47 PM
Bound File Name = SIM07062012.0014.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 2:50:40 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

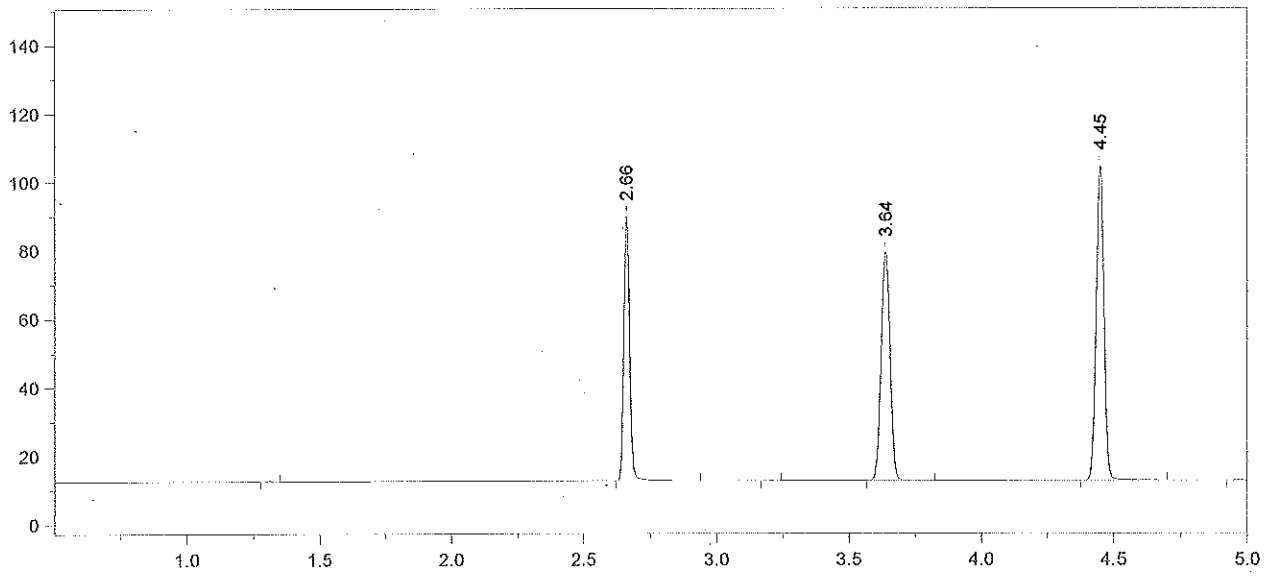
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	114373	0.1187	0.0969
4	3.64	t-Butanol	147471	1.0280	0.8390
5	4.45	n-Propanol	185354	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 3:04:32 PM
Bound File Name = SIM07062012.0015.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 3:04:24 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

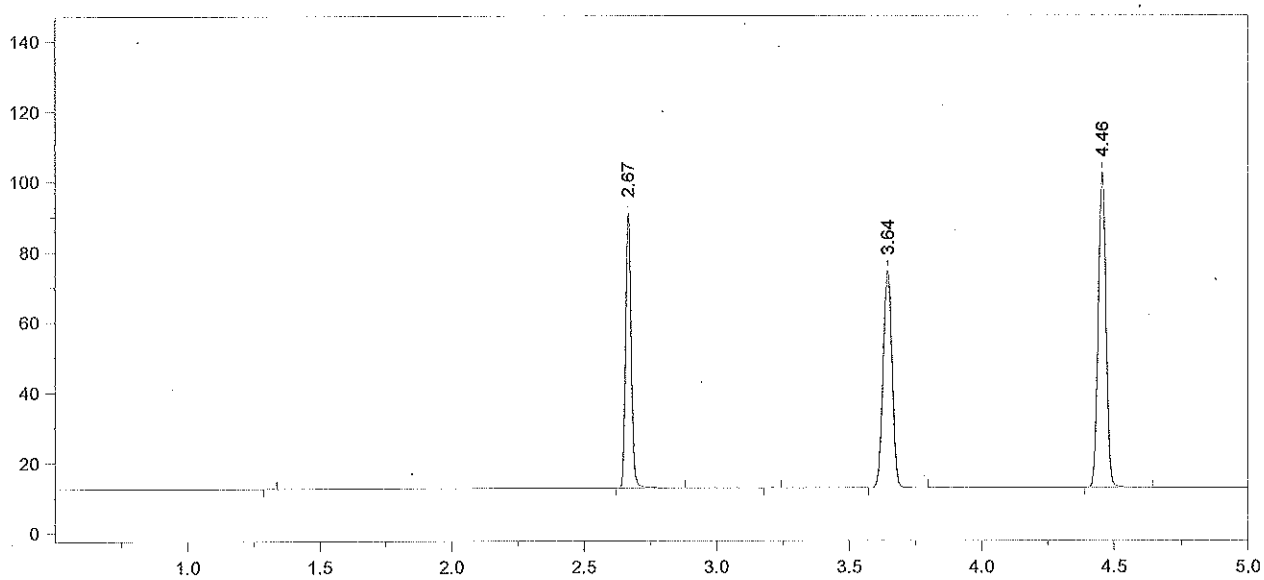
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115807	0.1205	0.0984
4	3.64	t-Butanol	140478	0.9822	0.8017
5	4.45	n-Propanol	184784	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 3:22:09 PM
Bound File Name = SIM07062012.0016.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 3:22:03 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

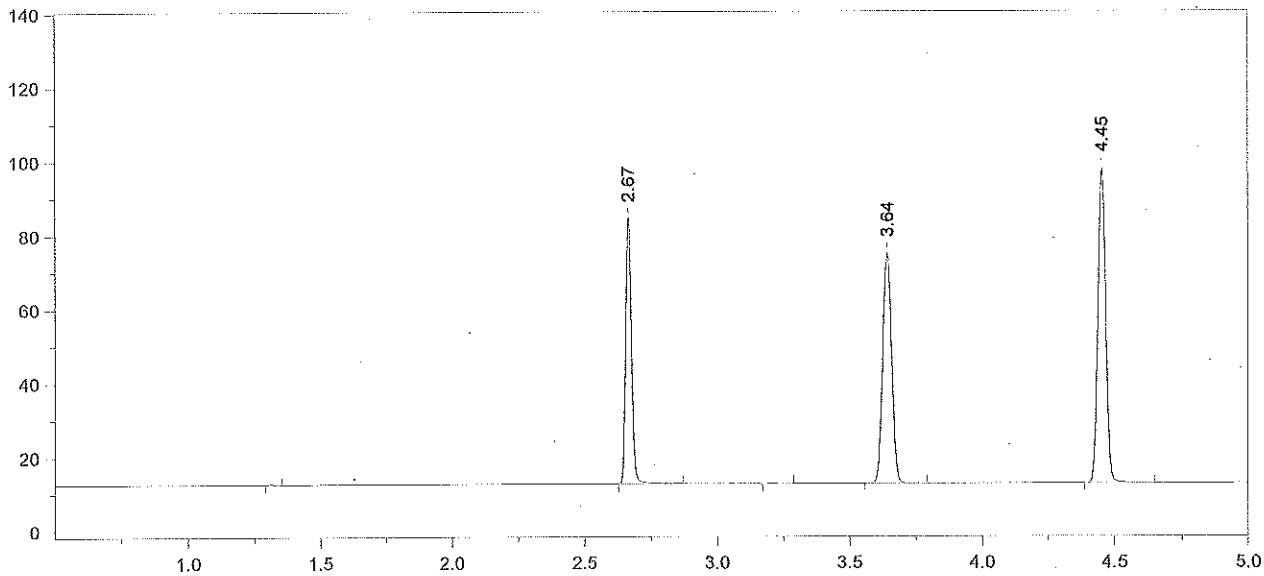
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119108	0.1175	0.0959
4	3.64	t-Butanol	154999	1.0272	0.8384
5	4.45	n-Propanol	194952	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 3:36:05 PM
Bound File Name = SIM07062012.0017.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 3:35:58 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

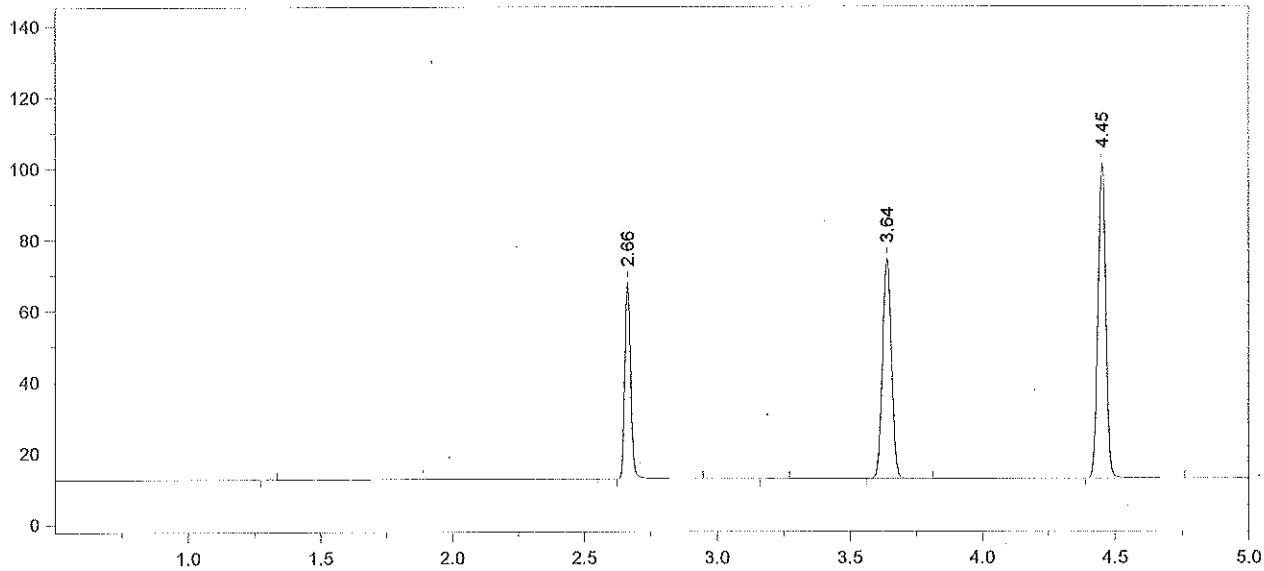
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	119390	0.1212	0.0989
4	3.64	t-Butanol	142717	0.9729	0.7940
5	4.46	n-Propanol	189538	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 3:53:36 PM
Bound File Name = SIM07062012.0018.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 7/6/2012 3:53:27 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

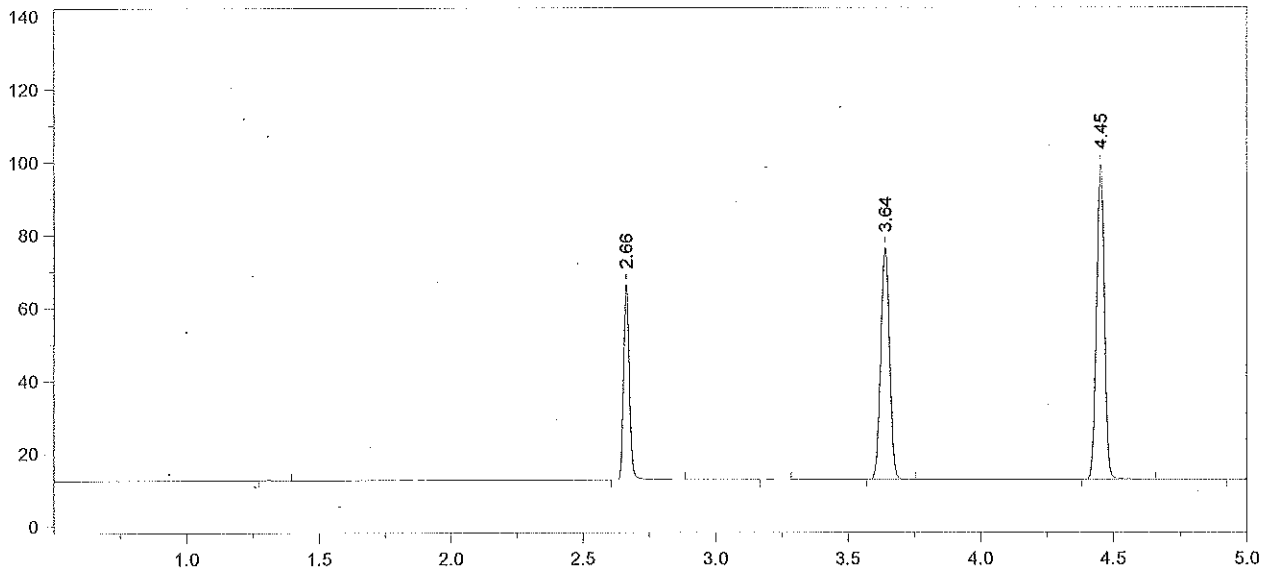
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	110846	0.1180	0.0963
4	3.64	t-Butanol	144259	1.0319	0.8423
5	4.45	n-Propanol	180616	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 4:06:54 PM
Bound File Name = SIM07062012.0019.RAW
Sample Name = CCS
Date Taken = 7/6/2012 4:06:42 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

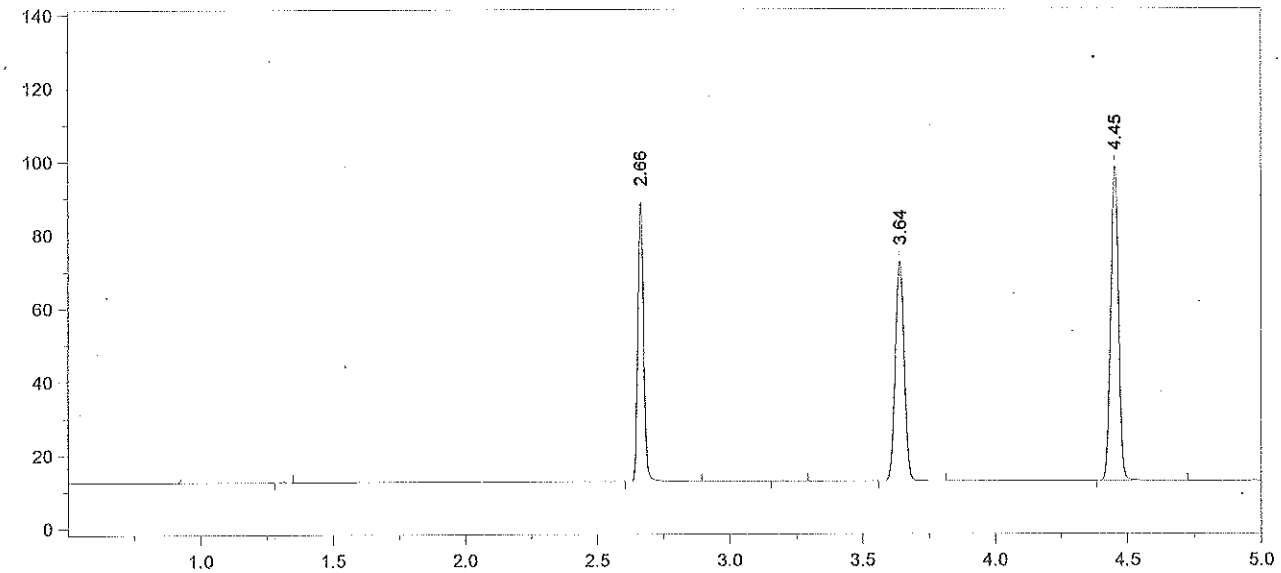
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	85521	0.0880 ✓	0.0718
4	3.64	t-Butanol	142294	0.9837	0.8029
5	4.45	n-Propanol	186897	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 4:25:00 PM
Bound File Name = SIM07062012.0020.RAW
Sample Name = CCS
Date Taken = 7/6/2012 4:24:51 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

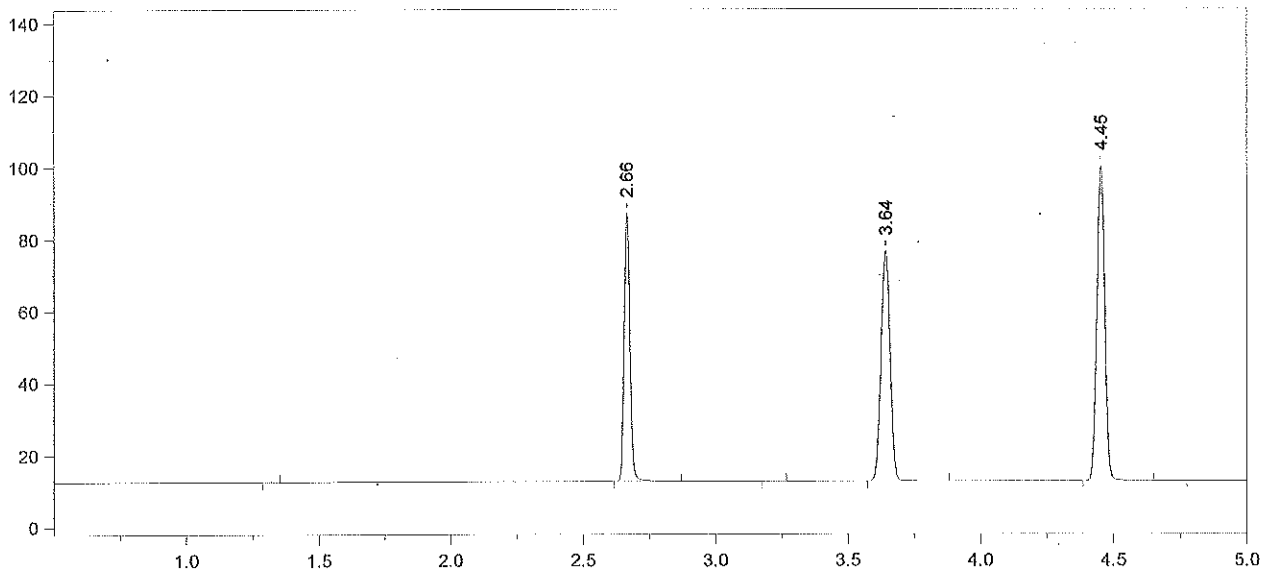
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	82266	0.0860	0.0702
4	3.64	t-Butanol	146719	1.0306	0.8411
5	4.45	n-Propanol	183944	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 4:38:43 PM
Bound File Name = SIM07062012.0021.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 4:38:37 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

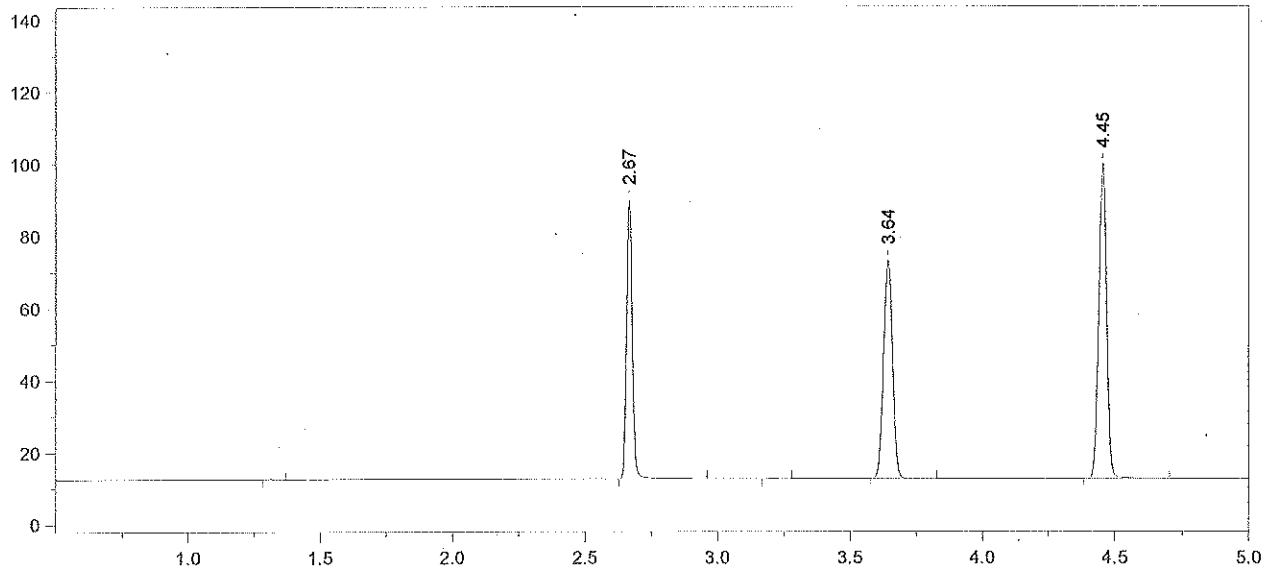
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	116642	0.1238	0.1011
4	3.64	t-Butanol	138065	0.9847	0.8037
5	4.45	n-Propanol	181155	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 4:56:26 PM
Bound File Name = SIM07062012.0022.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 4:56:15 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

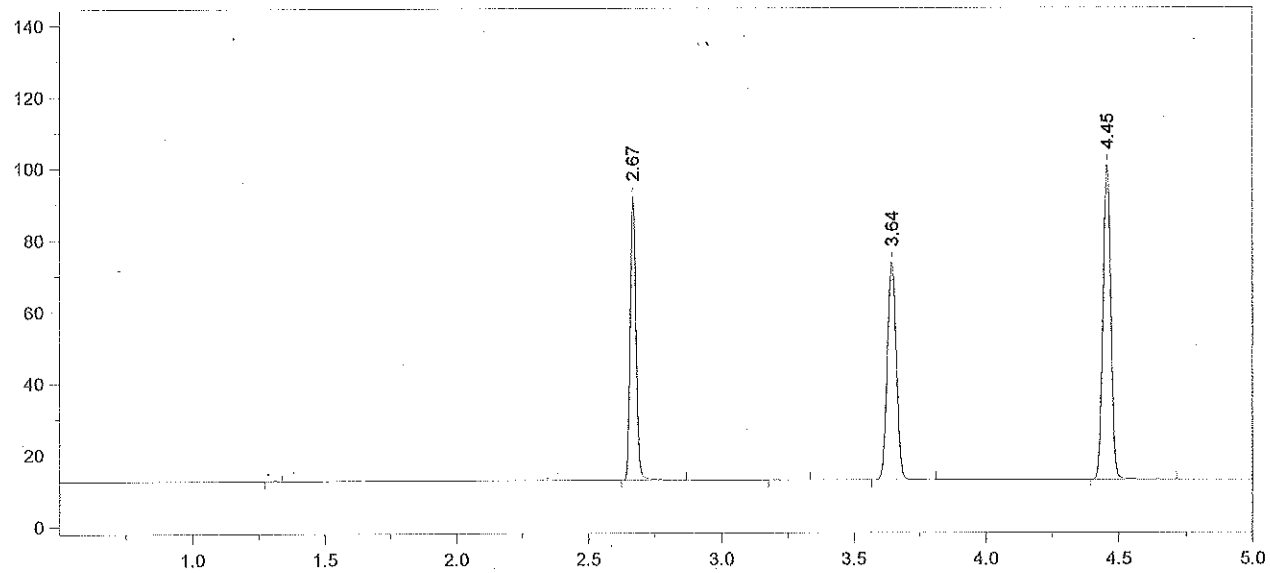
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	114557	0.1186	0.0968 ✓
4	3.64	t-Butanol	147819	1.0283	0.8393
5	4.45	n-Propanol	185727	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 5:10:01 PM
Bound File Name = SIM07062012.0023.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 5:09:51 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

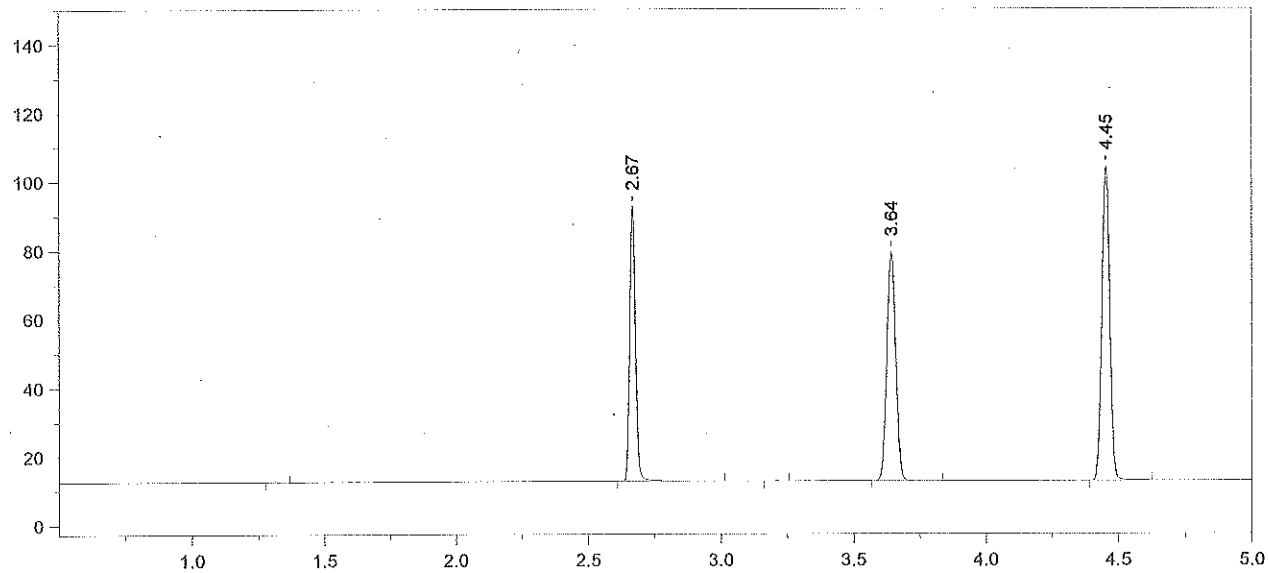
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	118900	0.1244	0.1015 ✓
4	3.64	t-Butanol	139375	0.9794	0.7994
5	4.45	n-Propanol	183866	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 5:41:46 PM
Bound File Name = SIM07062012.0025.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 5:41:35 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

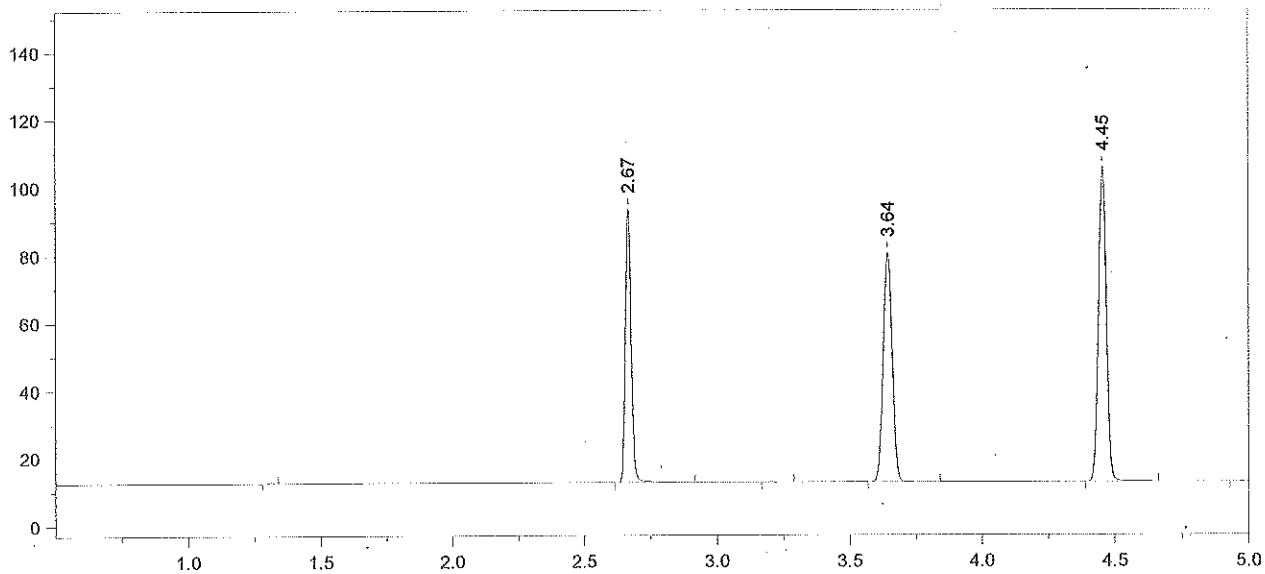
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	120937	0.1245	0.1017 ✓
4	3.64	t-Butanol	140267	0.9704	0.7920
5	4.45	n-Propanol	186765	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 5:26:08 PM
Bound File Name = SIM07062012.0024.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 5:25:57 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

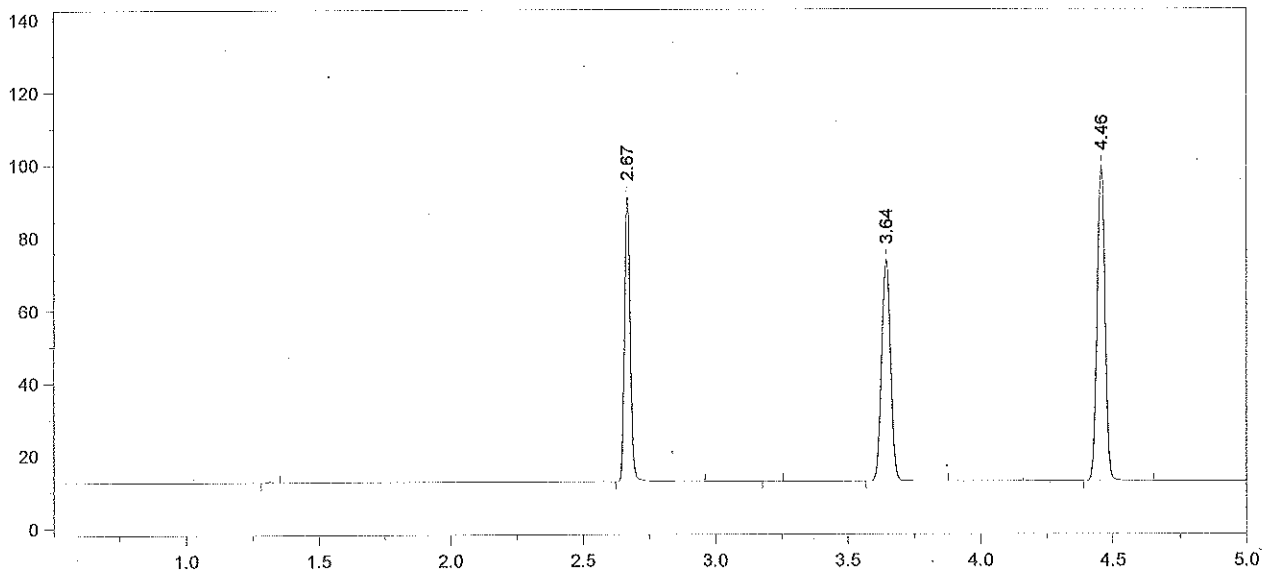
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	122803	0.1219	0.0995
4	3.64	t-Butanol	153653	1.0249	0.8365
5	4.45	n-Propanol	193708	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 5:57:39 PM
Bound File Name = SIM07062012.0026.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 5:57:29 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

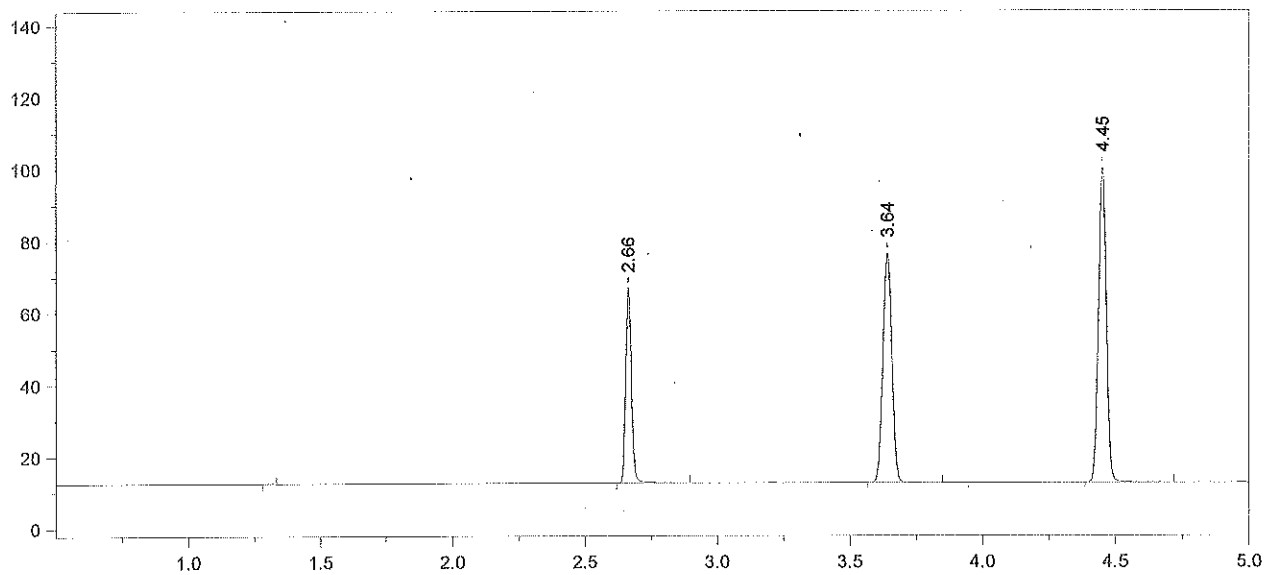
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	123734	0.1211	0.0989
4	3.64	t-Butanol	156163	1.0270	0.8382
5	4.45	n-Propanol	196458	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 6:11:27 PM
Bound File Name = SIM07062012.0027.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 7/6/2012 6:11:19 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

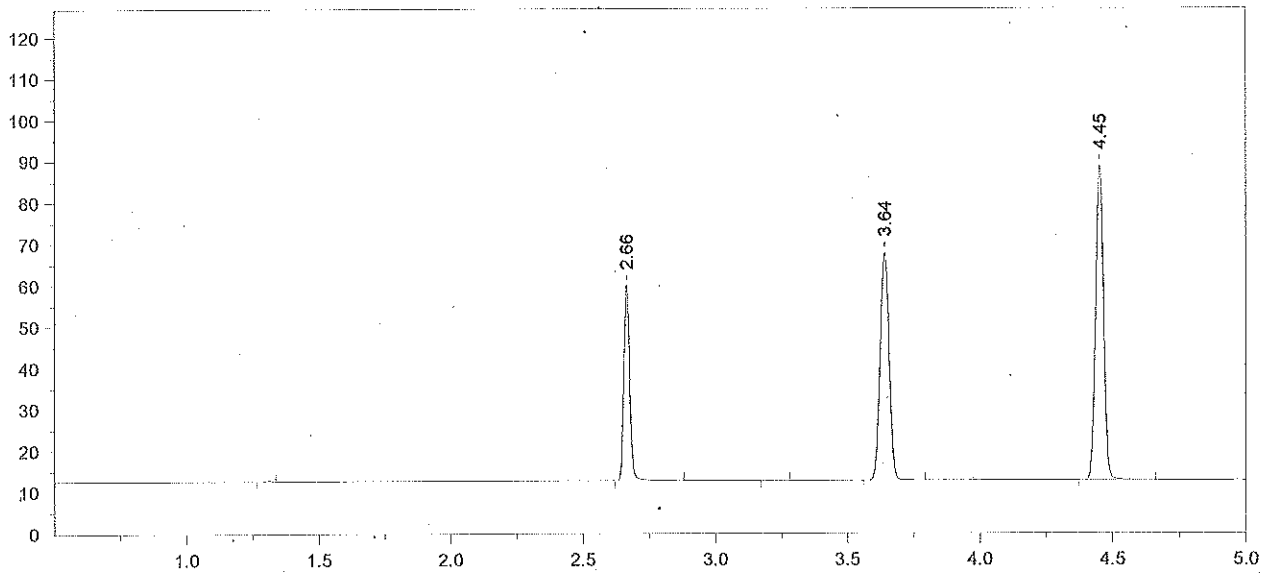
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	120048	0.1248	0.1018 ✓
4	3.64	t-Butanol	141090	0.9851	0.8041
5	4.46	n-Propanol	185039	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 6:29:04 PM
Bound File Name = SIM07062012.0028.RAW
Sample Name = CCS
Date Taken = 7/6/2012 6:28:55 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	83299	0.0866	0.0707
3	3.64	t-Butanol	146936	1.0264	0.8378
4	4.45	n-Propanol	184954	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 7/6/2012
Today's Time = 6:42:55 PM
Bound File Name = SIM07062012.0029.RAW
Sample Name = CCS
Date Taken = 7/6/2012 6:42:46 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 07062012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	72990	0.0869 ✓	0.0710
4	3.64	t-Butanol	127556	1.0207	0.8331
5	4.45	n-Propanol	161466	1.0000	0.8162