VERMONT FORENSIC LABORATORY

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Certificate of Analysis of DataMaster External Standard Solution

On 5/8/2012, 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 12-77-100 and an expiration date of 5/8/2013.

On 5/11/2012 and 5/14/2012, the solution was analyzed against calibration SimCal05112012 and SimCal05142012. 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 Tuesday, May 15, 2012.

Amanda Bolduc

0.1 Ext Std Solution 20L
Lot # 12-77-100
Prepared 05/08/2012 by ALB
Exp 05/08/2013

ALB Cal SimCal 05112012
ALB/TLC Vials
Analyzed on 5/11/2012

0.0976 alb
0.1003
0.1001
0.1021
0.0991
0.1022
0.1003
0.0991 tlc
0.0974
0.1002
0.0965
0.0992
0.0971
0.0993

Ave. = 0.0993
Std Dev. = 0.0017
Range = 0.0965 - 0.1022

TLC CAL SimCal 05142012
ALB/TLC Vials
Analyzed on 5/14/2012

0.0967 tlc
0.0992
0.0968
0.0988
0.0976
0.0994
0.0970
0.1016 alb
0.0994
0.1013
0.0973
0.1014
0.0980
0.0981

Ave. = 0.0988
Std Dev. = 0.0017
Range = 0.0967 - 0.1016

Total Values from Both Runs

Average	**Mean**
0.0976	0.0965
0.1003	0.0967
0.1001	0.0968
0.1021	0.0970
0.0991	0.0971
0.1022	0.0973
0.1003	0.0974
0.0991	0.0976
0.0974	
0.1002	0.0980
0.0965	0.0981
0.0992	0.0988
0.0971	0.0991
0.0993	
0.0967	0.0992
0.0992	
0.0968	0.0993
0.0988	0.0994
0.0976	
0.0994	0.1001
0.0970	0.1002
0.1016	0.1003
0.0994	
0.1013	0.1013
0.0973	0.1014
0.1014	0.1016
0.0980	0.1021
0.0981	0.1022

Ave. =	0.0990
Std Dev. =	0.0017
Range =	0.0965 - 0.1022
Mean =	0.0990
Mean Std Dev. =	0.0019
RPD (Mean to Ave.)=	0.00%

5/15/2012

Headspace Alcohol Analysis Standards Coversheet

Analyst: AUB Date: 5/11/12

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

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		0.086	Y N	
6	Standard D		0.207	Y N	
7	Standard E		0.416	Y N	
8	Aqueous QC		0.1006	Y N	
9	Aqueous QC		0.0992	Y N	$\bar{x}$ = 0.100 ✓

5/15/2012

File Name: C:\Methods\SimCal 05112012.cal
Version: 7

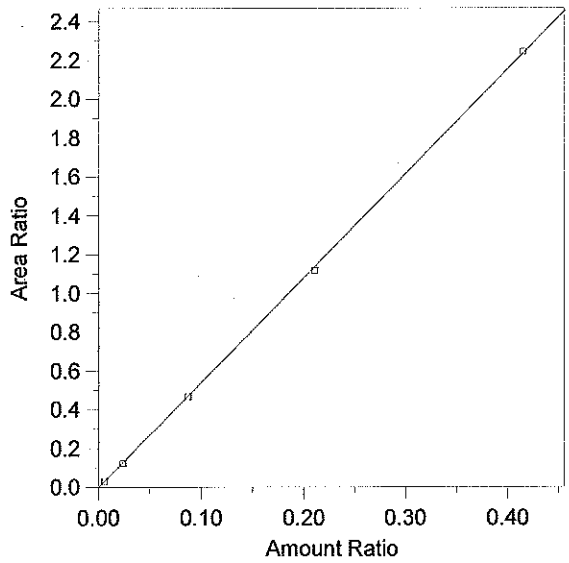
Creator:
Description:
Reason for change:

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

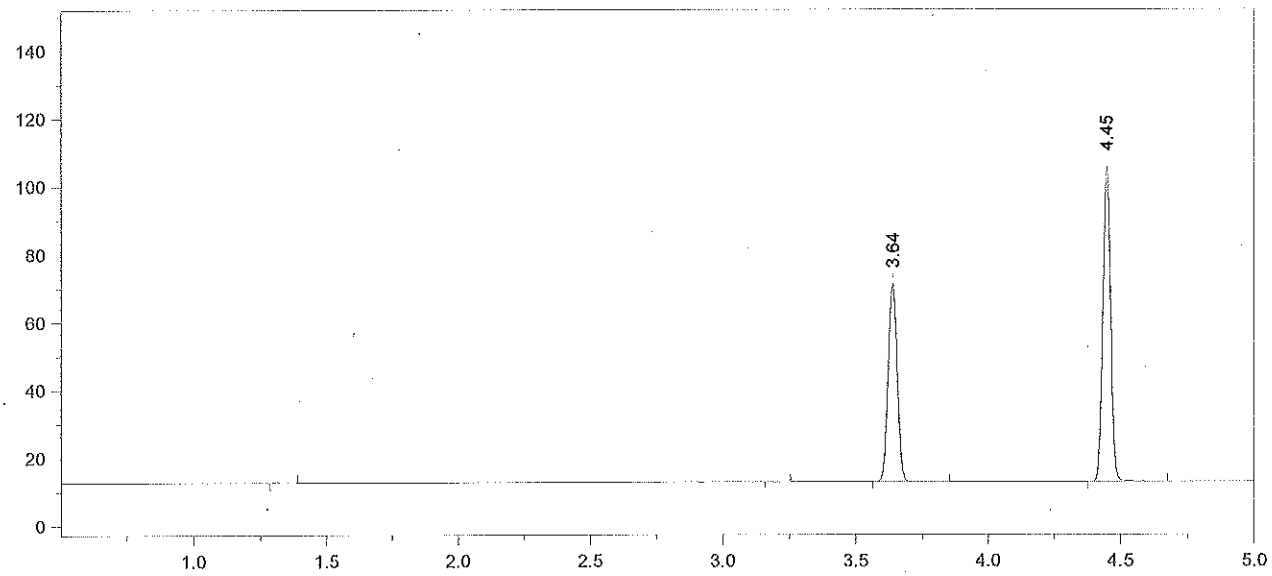
High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 5.387655 X + 0

Linear fit with equal weighting, forced to origin
Coefficient of determination: 0.9998448
Average error: 1.747%
Average CF: 5.303887
RSD: 1.562%

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	5628.357	953958.8	-2.659	0.0059	3.094204E-02	C:\Alcohol Data\SIM05112012\SIM05112012.0003.BND	5/11/2012 2:03:45 PM
3	0.0235	22032.96	937572.8	-3.314	0.0235	0.1224136	C:\Alcohol Data\SIM05112012\SIM05112012.0004.BND	5/11/2012 2:21:29 PM
4	0.0869	83294.05	958504.5	-0.565	0.0869	0.4655408	C:\Alcohol Data\SIM05112012\SIM05112012.0005.BND	5/11/2012 2:35:38 PM
5	0.2107	213590.5	1013719	-1.715	0.2107	1.115708	C:\Alcohol Data\SIM05112012\SIM05112012.0006.BND	5/11/2012 2:51:15 PM
6	0.4144	414630	1000555	0.479	0.4144	2.24335	C:\Alcohol Data\SIM05112012\SIM05112012.0007.BND	5/11/2012 3:06:45 PM



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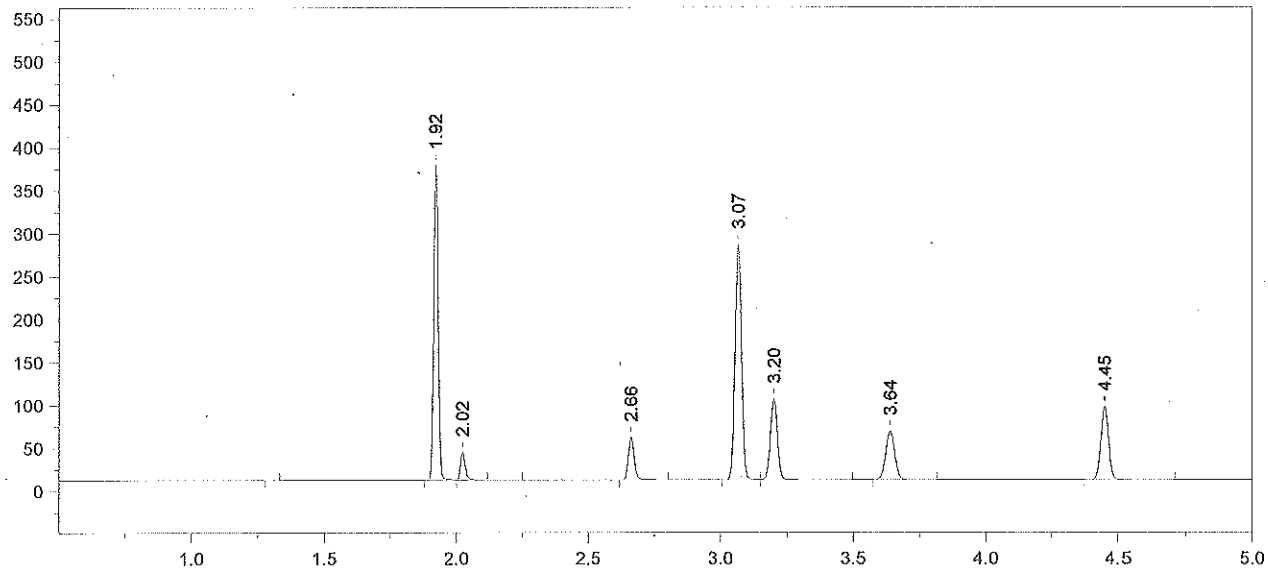
Today's Date = 5/14/2012
Today's Time = 8:39:32 AM
Bound File Name = SIM05112012.0001.RAW
Sample Name = Blank
Date Taken = 5/11/2012 1:31:59 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

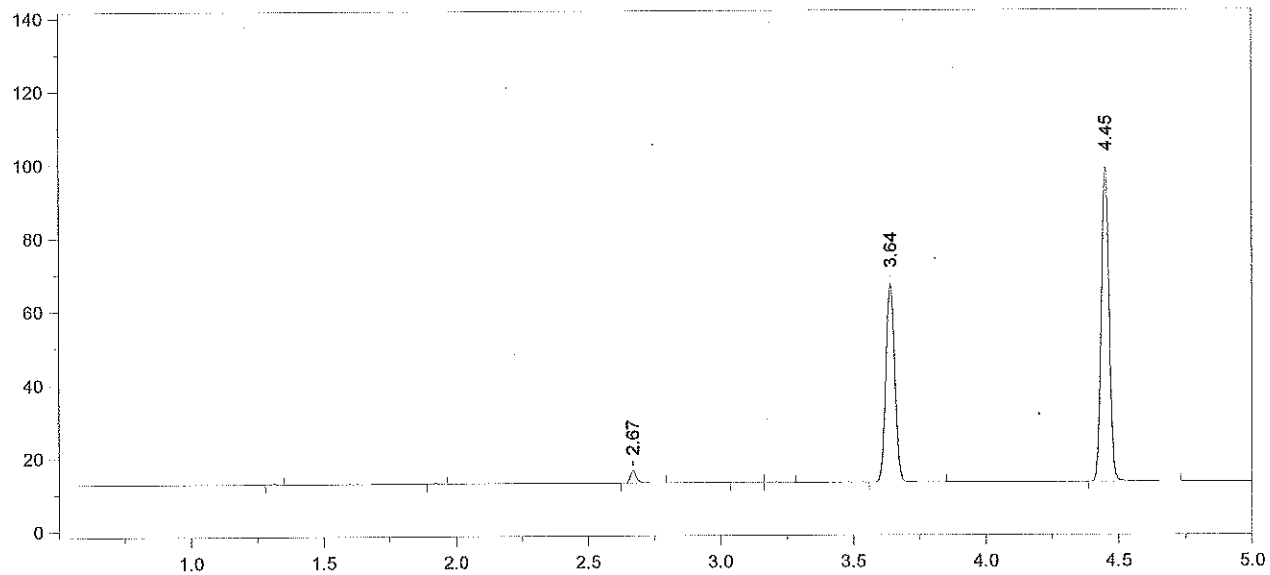
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	3.64	t-Butanol	134759	0.9690	0.7909
4	4.45	n-Propanol	196545	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012
Today's Time = 8:39:40 AM
Bound File Name = SIM05112012.0002.RAW
Sample Name = TMX
Date Taken = 5/11/2012 1:49:58 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

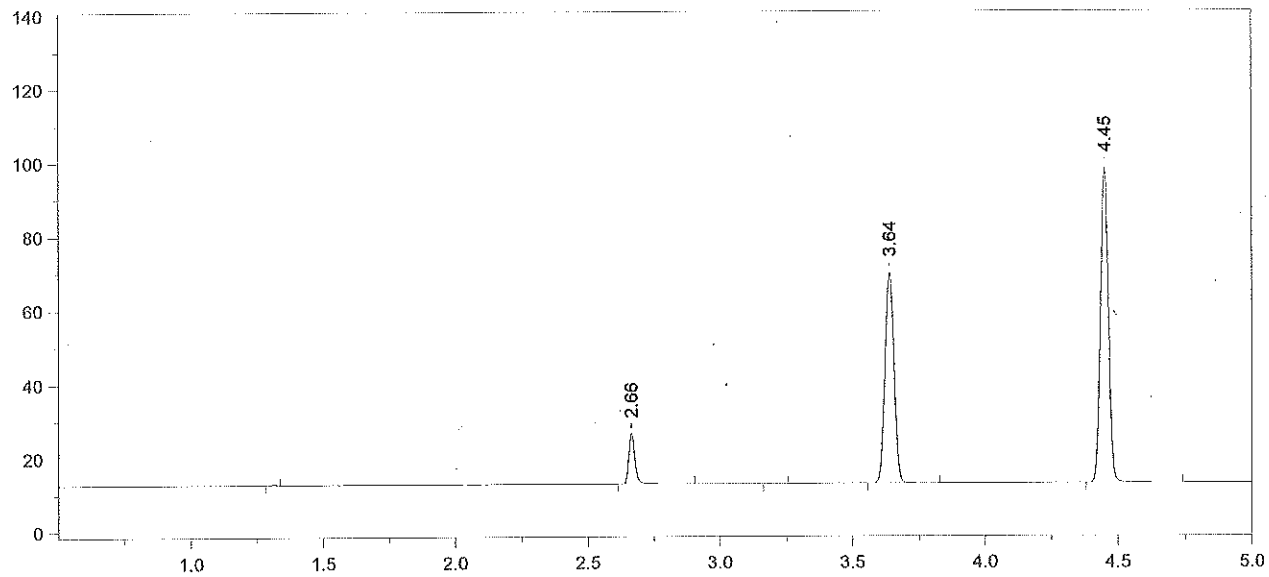
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	1.92	Acetaldehyde	419689	0.0900	0.0735
3	2.02	Methanol	39498	0.0920	0.0751
4	2.66	Ethanol	76106	0.0786	0.0642
5	3.07	Acetone	463012	0.0920	0.0751
6	3.20	Isopropanol	175288	0.1230	0.1004
7	3.64	t-Butanol	129769	1.0209	0.8333
8	4.45	n-Propanol	179649	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012
Today's Time = 8:39:49 AM
Bound File Name = SIM05112012.0003.RAW
Sample Name = STD A
Date Taken = 5/11/2012 2:03:36 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	05628	0.0057	0.0047
6	3.64	t-Butanol	125600	0.9759	0.7965
7	4.45	n-Propanol	181900	1.0000	0.8162



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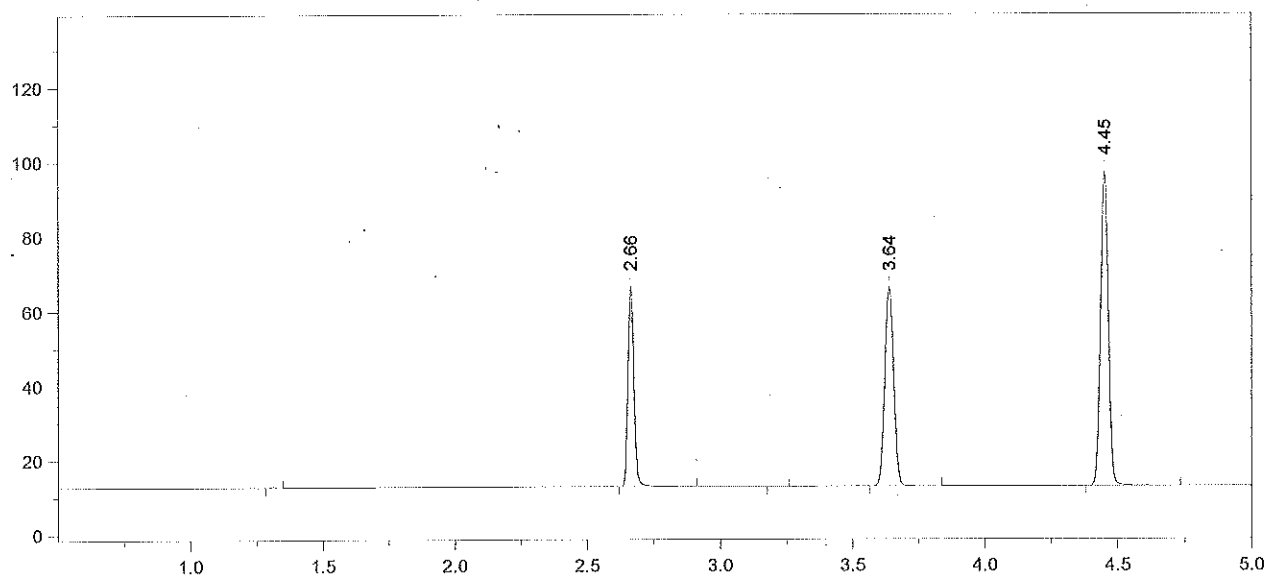
Today's Time = 8:39:58 AM
Bound File Name = SIM05112012.0004.RAW
Sample Name = STD B
Date Taken = 5/11/2012 2:21:22 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

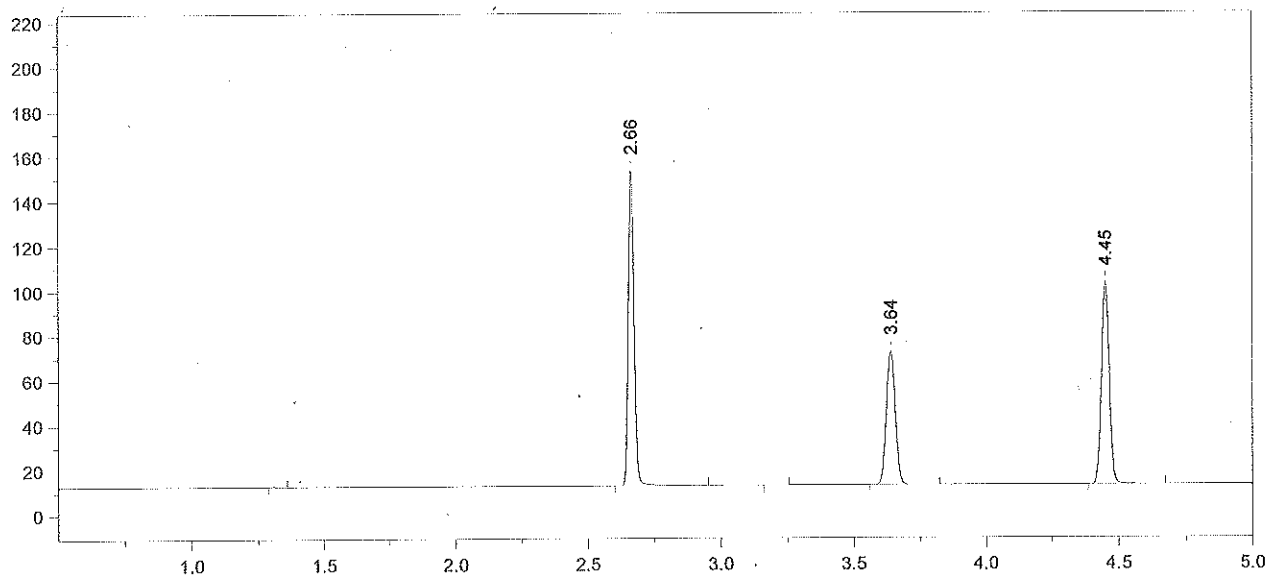
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	22033	0.0227	0.0185
4	3.64	t-Butanol	131898	1.0357	0.8453
5	4.45	n-Propanol	179988	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012
Today's Time = 8:40:07 AM
Bound File Name = SIM05112012.0005.RAW
Sample Name = STD C
Date Taken = 5/11/2012 2:35:25 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	83294	0.0864	0.0705
4	3.64	t-Butanol	123354	0.9744	0.7953
5	4.45	n-Propanol	178919	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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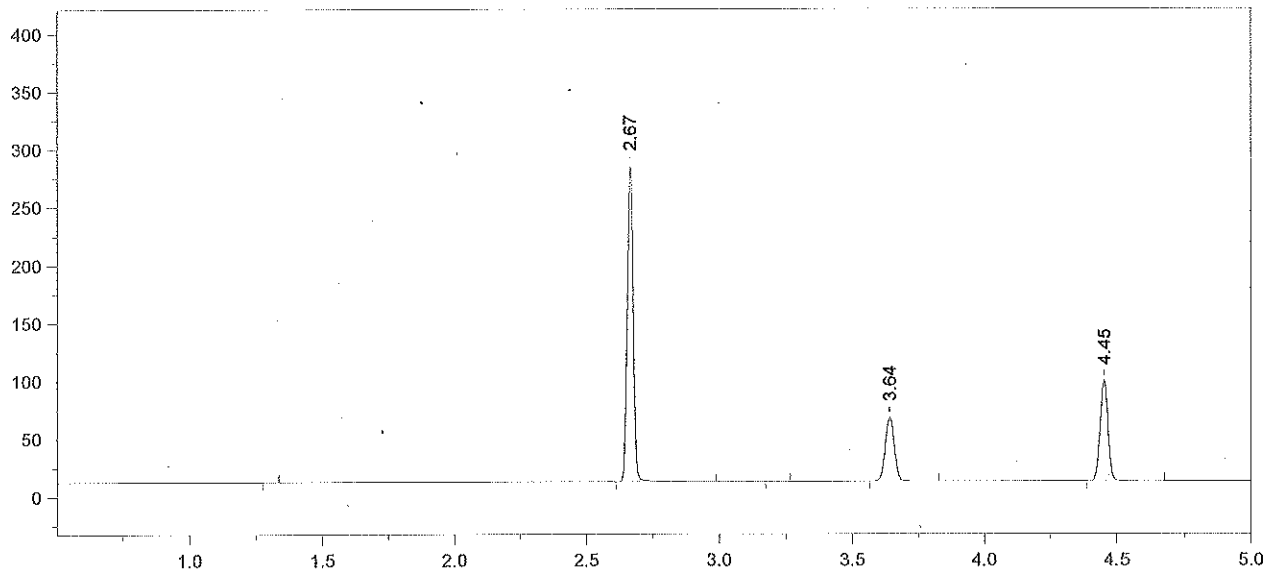
Today's Time = 8:40:16 AM
Bound File Name = SIM05112012.0006.RAW
Sample Name = STD D
Date Taken = 5/11/2012 2:51:06 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

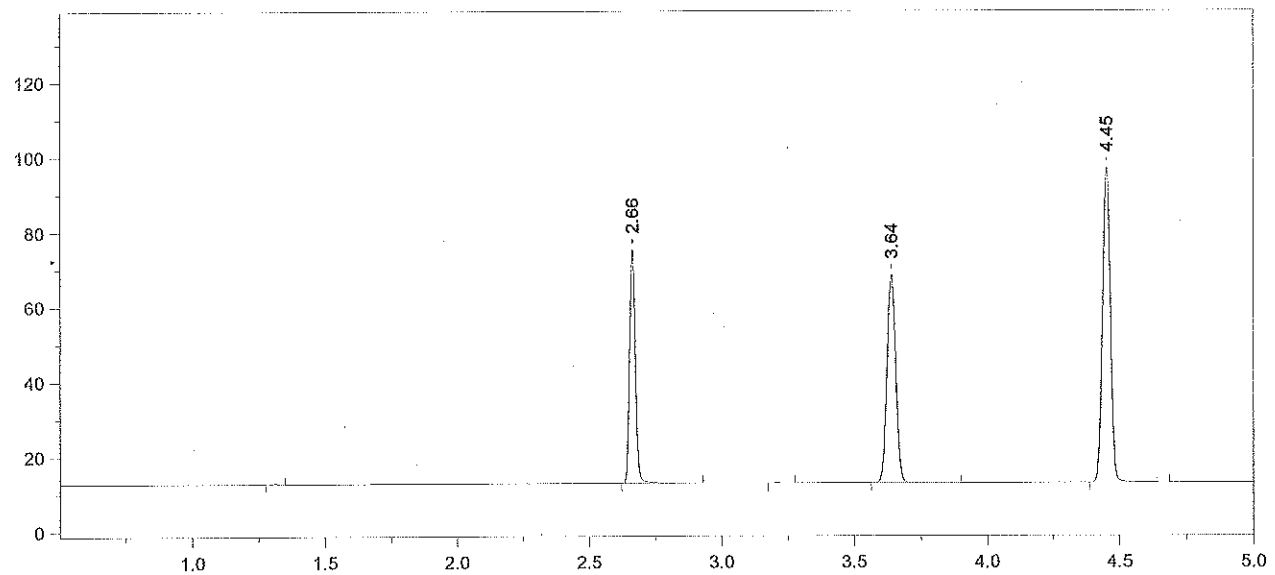
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	213591	0.2071	0.1690
4	3.64	t-Butanol	137669	1.0164	0.8295
5	4.45	n-Propanol	191440	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012
Today's Time = 8:40:25 AM
Bound File Name = SIM05112012.0007.RAW
Sample Name = STD E
Date Taken = 5/11/2012 3:06:34 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

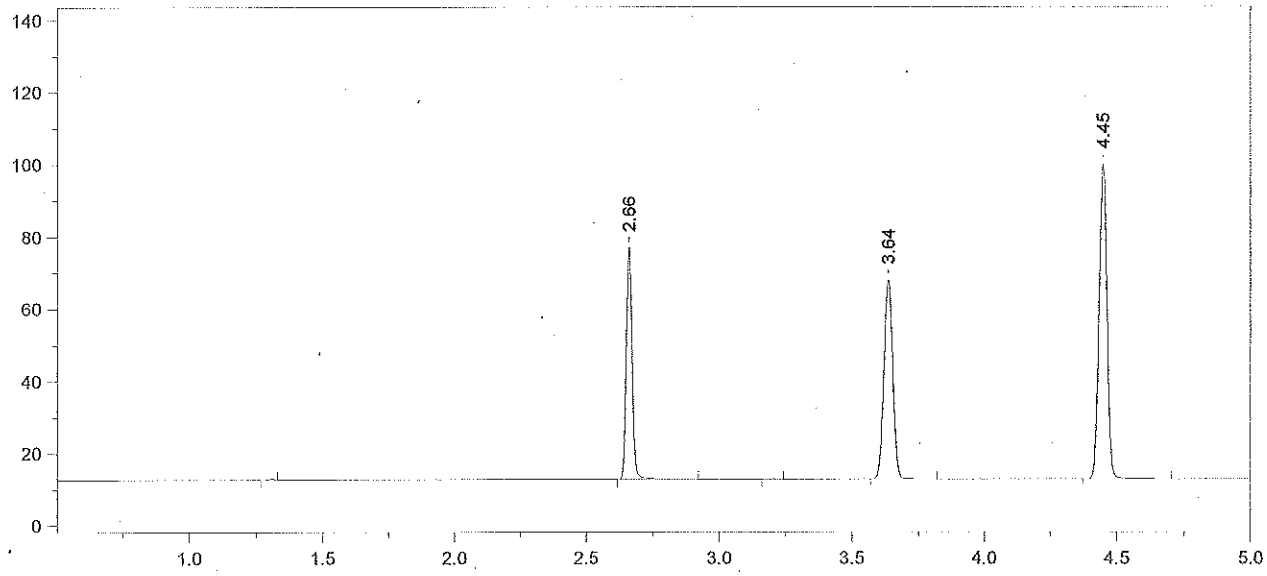
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	414630	0.4164	0.3399
4	3.64	t-Butanol	127732	0.9767	0.7972
5	4.45	n-Propanol	184826	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012
Today's Time = 8:40:34 AM
Bound File Name = SIM05112012.0008.RAW
Sample Name = AQ QC
Date Taken = 5/11/2012 3:22:36 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

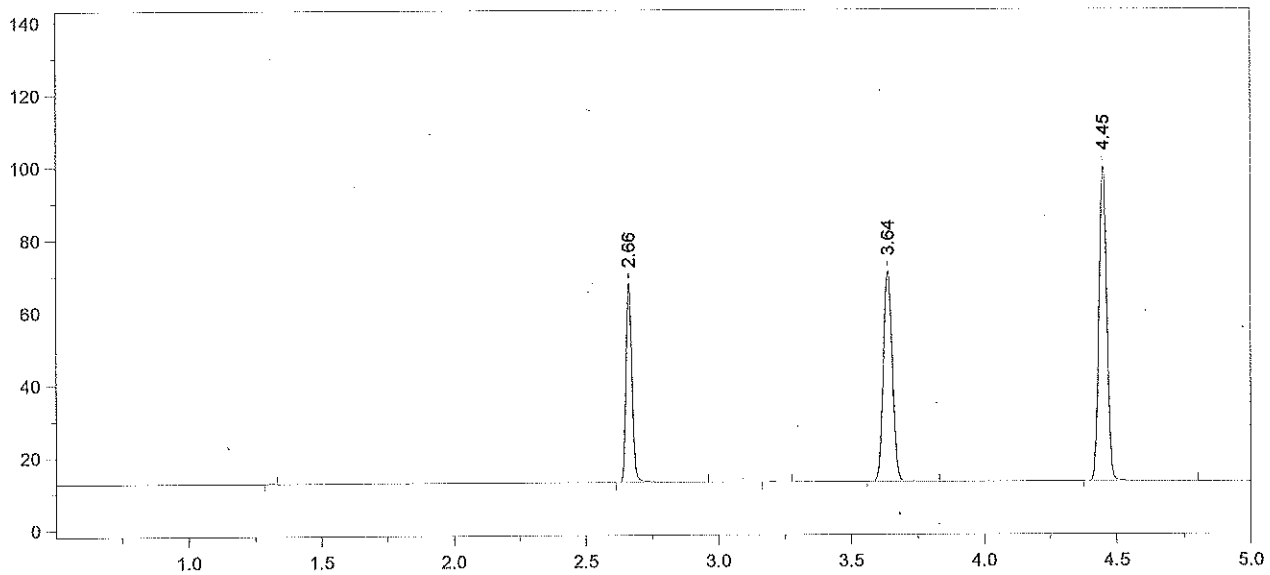
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	96441	0.1006	0.0821
4	3.64	t-Butanol	128773	1.0224	0.8345
5	4.45	n-Propanol	178011	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/14/2012 Today's Time = 8:40:43 AM
Bound File Name = SIM05112012.0009.RAW
Sample Name = AQ QC
Date Taken = 5/11/2012 3:36:49 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal Calibration Version = 7

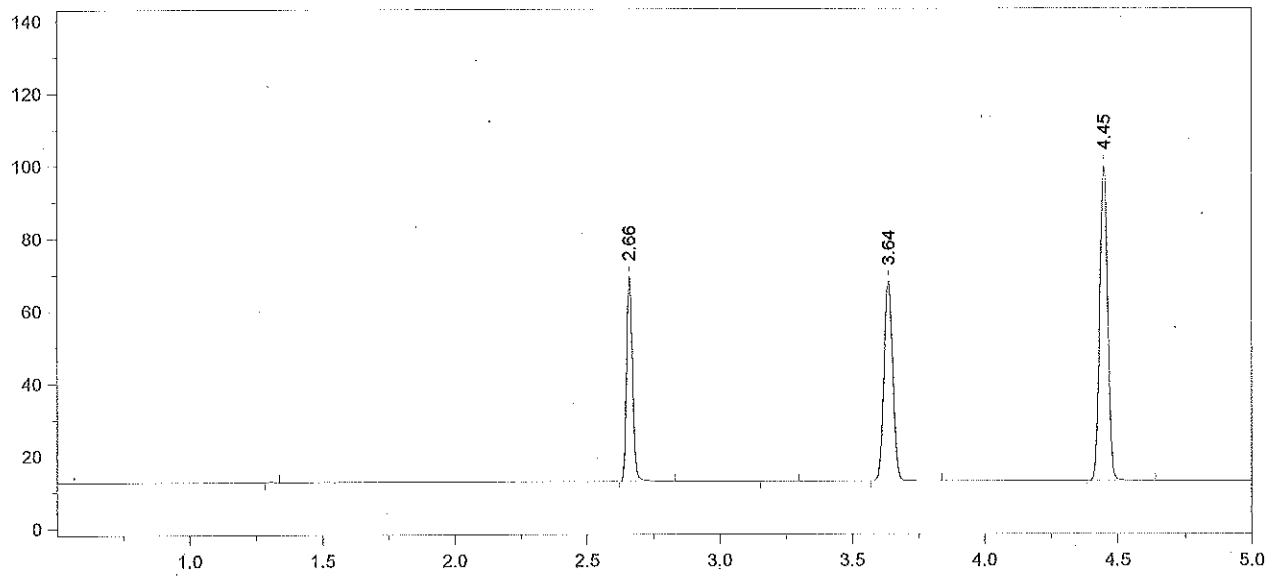
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	98676	0.0992	0.0809
4	3.64	t-Butanol	127445	0.9754	0.7961
5	4.45	n-Propanol	184673	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 3:54:13 PM
Bound File Name = SIM05112012.0010.RAW
Sample Name = CCS
Date Taken = 5/11/2012 3:54:03 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

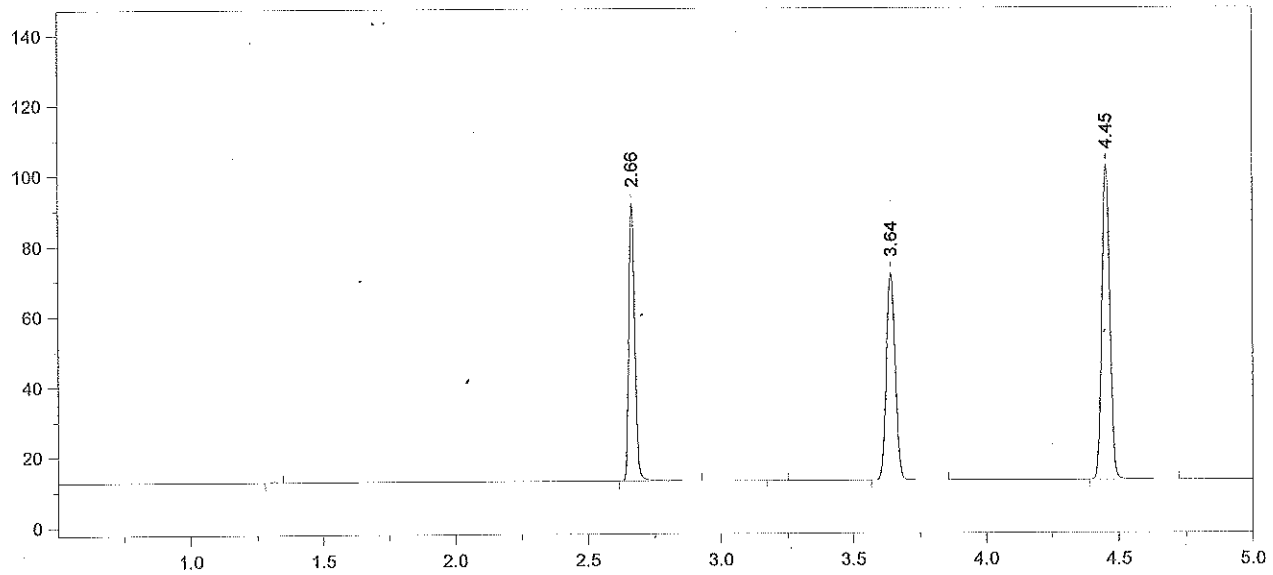
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	85463	0.0860 ✓	0.0702
4	3.64	t-Butanol	134447	1.0302	0.8409
5	4.45	n-Propanol	184442	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012 Today's Time = 4:07:24 PM
Bound File Name = SIM05112012.0011.RAW
Sample Name = CCS
Date Taken = 5/11/2012 4:07:13 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal Calibration Version = 7

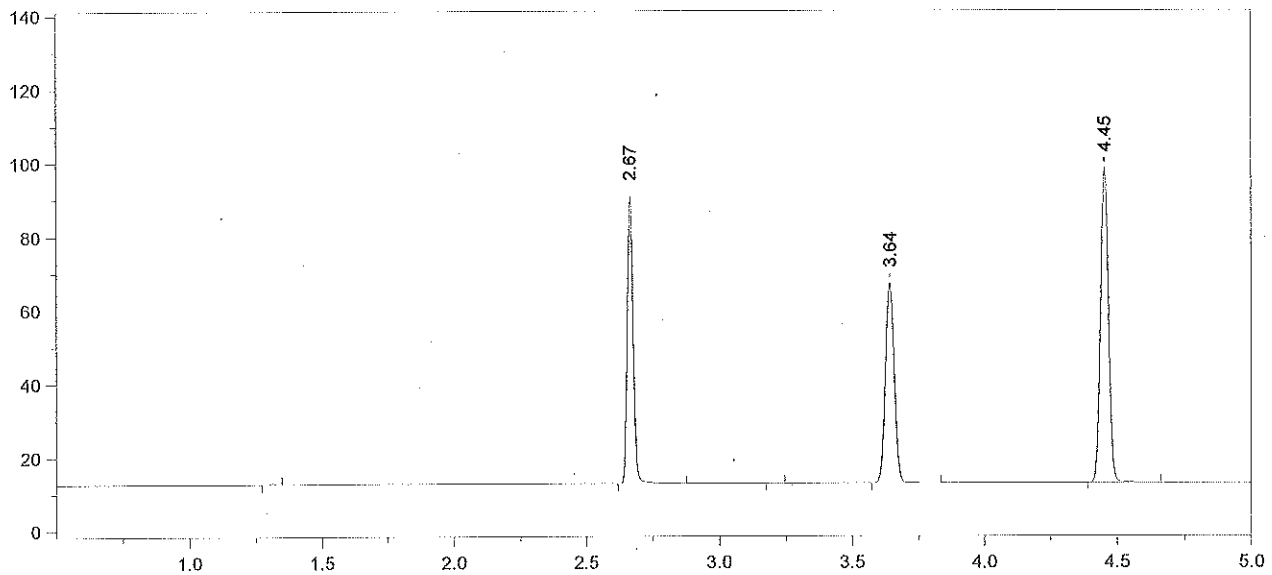
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	86626	0.0874 ✓	0.0713
4	3.64	t-Butanol	127230	0.9772	0.7976
5	4.45	n-Propanol	184021	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 4:23:51 PM
Bound File Name = SIM05112012.0012.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 4:23:46 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	122453	0.1195	0.0976
4	3.64	t-Butanol	136601	1.0154	0.8288
5	4.45	n-Propanol	190131	1.0000	0.8162



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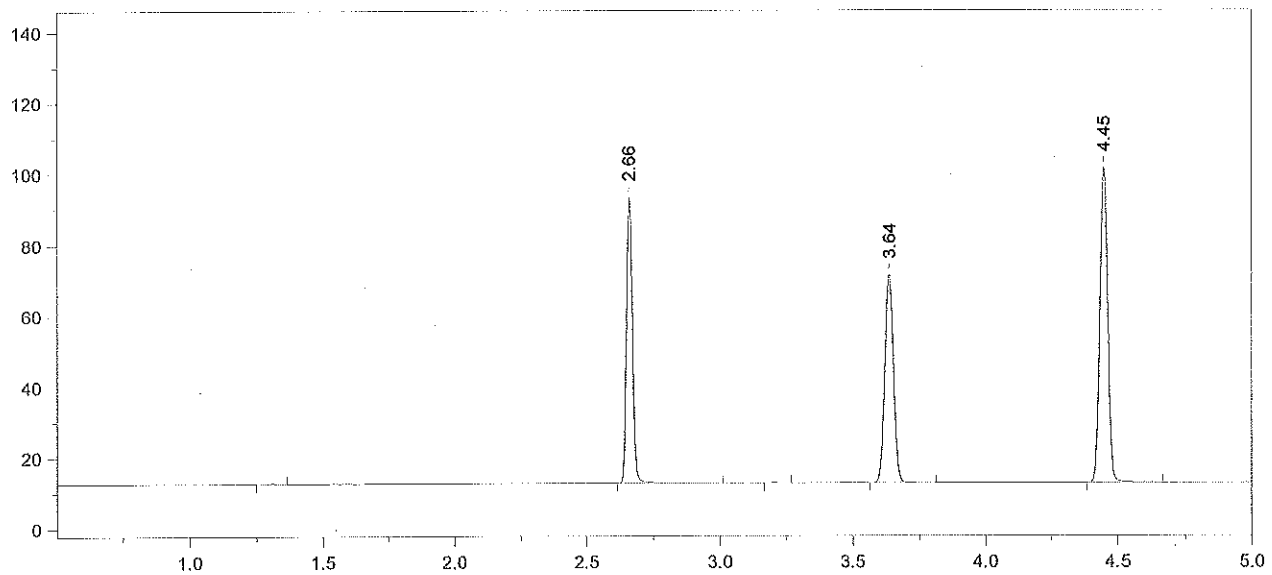
Today's Time = 4:39:22 PM
Bound File Name = SIM05112012.0013.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 4:39:14 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

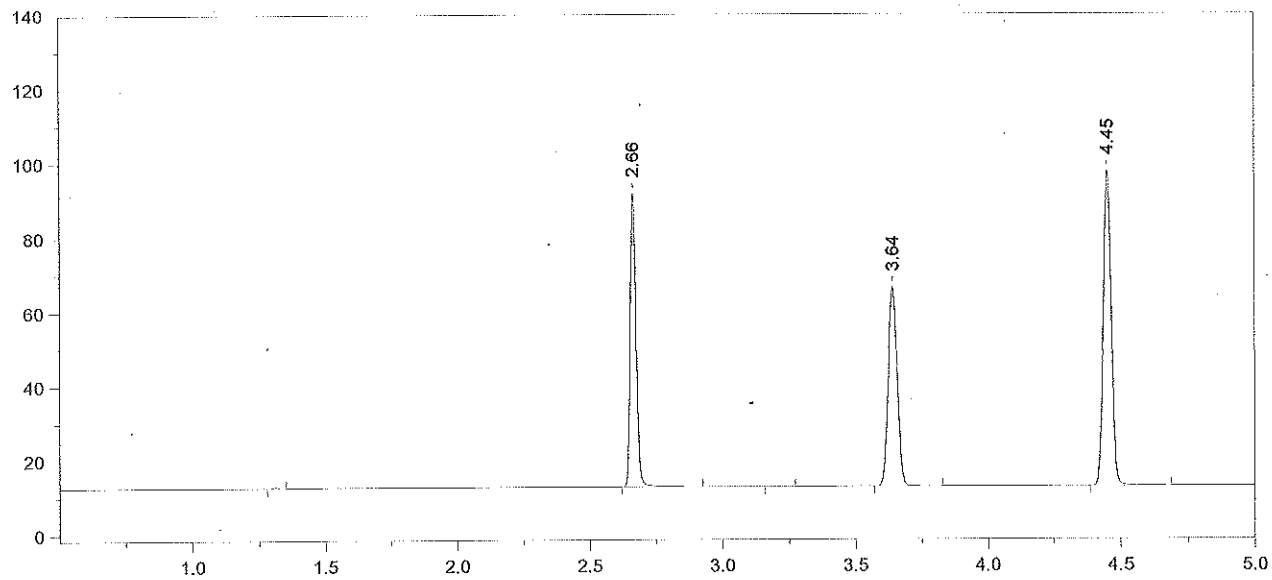
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	119592	0.1229	0.1003
4	3.64	t-Butanol	125250	0.9800	0.7999
5	4.45	n-Propanol	180633	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 4:55:29 PM
Bound File Name = SIM05112012.0014.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 4:55:21 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	124018	0.1226	0.1001
4	3.64	t-Butanol	135806	1.0225	0.8345
5	4.45	n-Propanol	187723	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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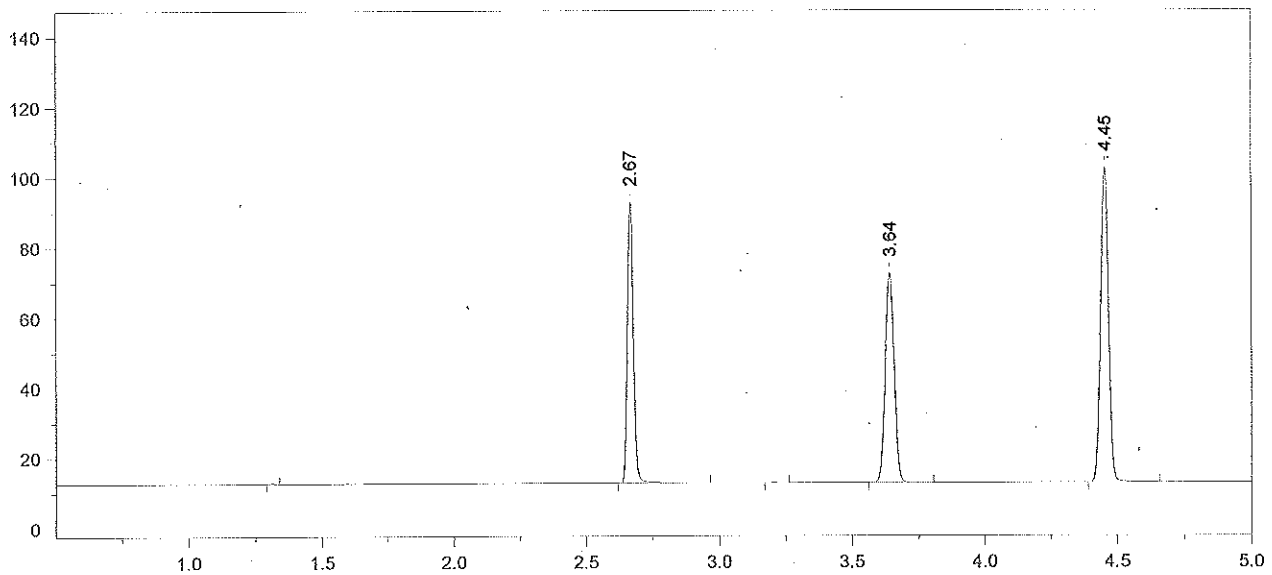
Today's Time = 5:09:40 PM
Bound File Name = SIM05112012.0015.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 5:09:29 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	121075	0.1251	0.1021
4	3.64	t-Butanol	123848	0.9748	0.7956
5	4.45	n-Propanol	179568	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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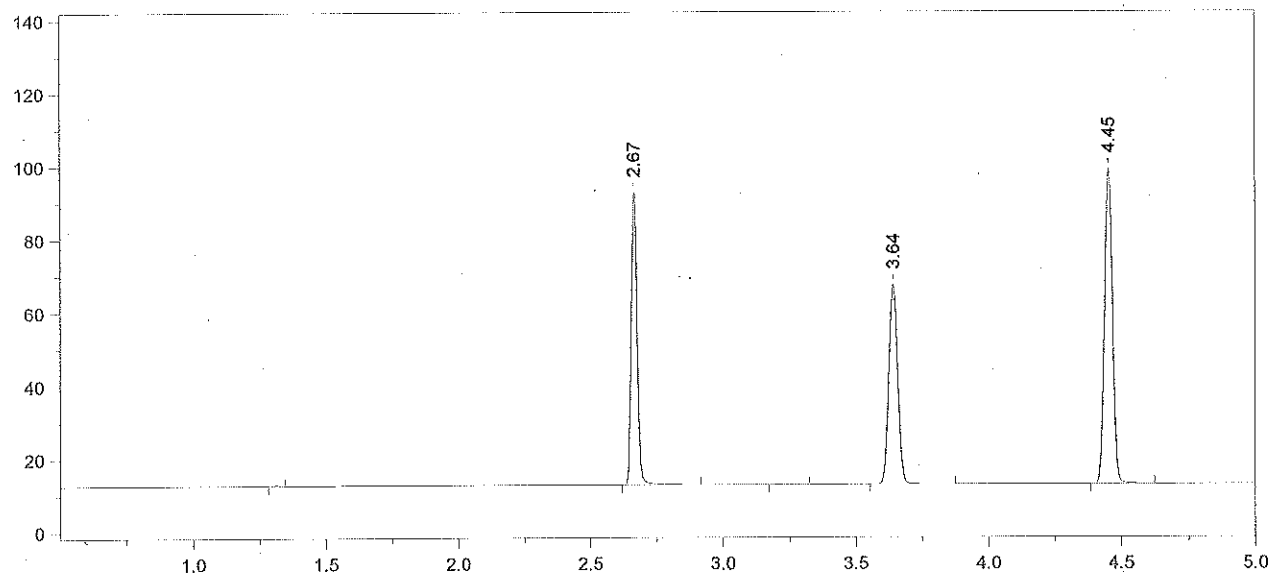
Today's Time = 5:26:55 PM
Bound File Name = SIM05112012.0016.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 5:26:45 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	124042	0.1214	0.0991
4	3.64	t-Butanol	138622	1.0333	0.8434
5	4.45	n-Propanol	189606	1.0000	0.8162



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Today's Time = 5:40:43 PM
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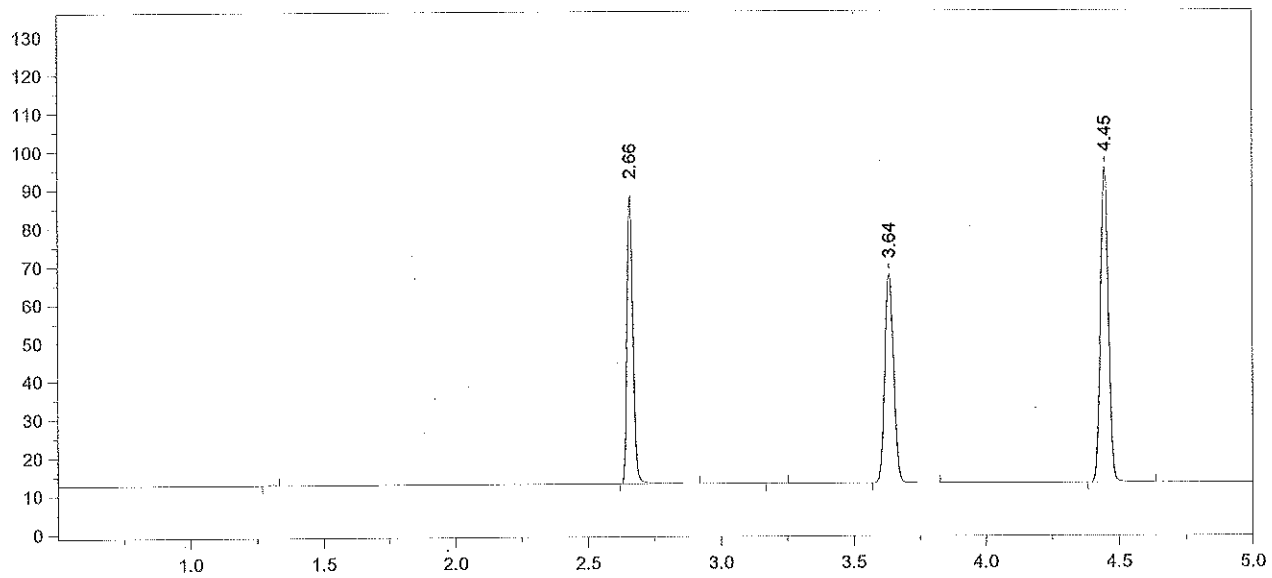
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 5:40:33 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

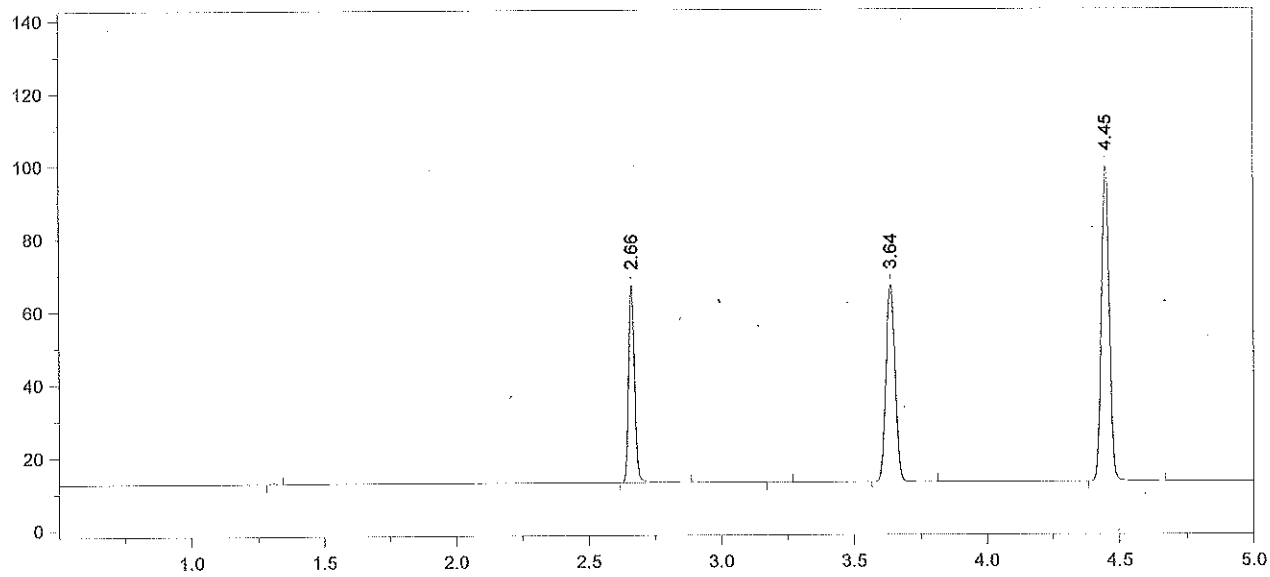
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	123303	0.1253	0.1022
4	3.64	t-Butanol	126139	0.9758	0.7965
5	4.45	n-Propanol	182695	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 5:58:17 PM
Bound File Name = SIM05112012.0018.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/11/2012 5:58:07 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

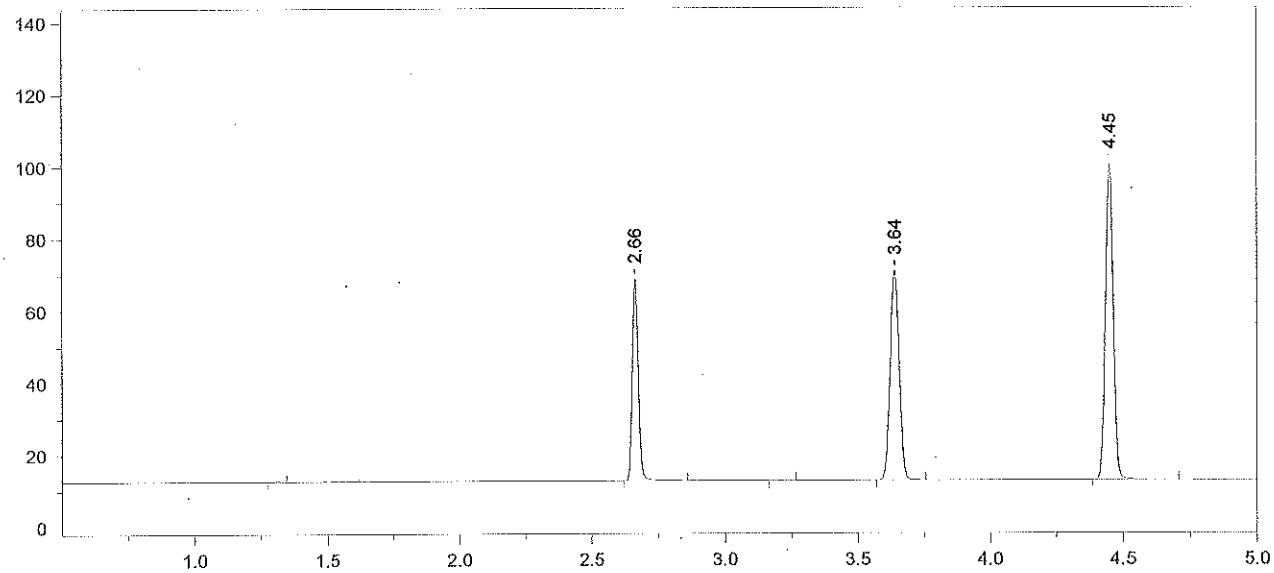
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115514	0.1229	0.1003
4	3.64	t-Butanol	126020	1.0213	0.8335
5	4.45	n-Propanol	174401	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 6:11:40 PM
Bound File Name = SIM05112012.0019.RAW
Sample Name = CCS
Date Taken = 5/11/2012 6:11:28 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

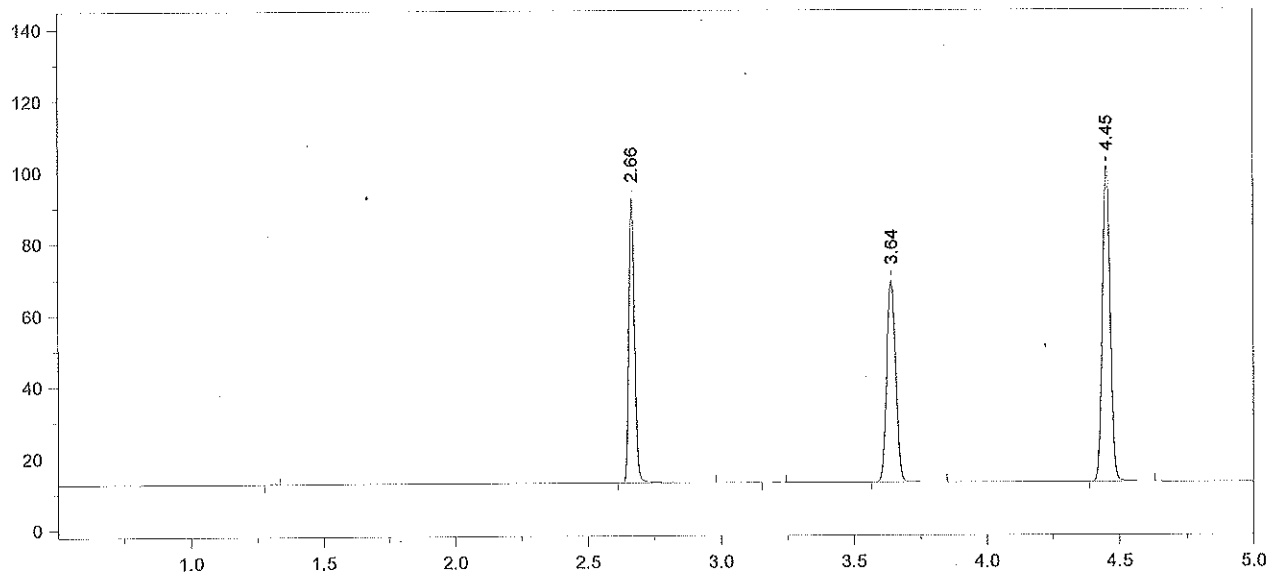
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	83655	0.0848	0.0692
4	3.64	t-Butanol	125047	0.9650	0.7877
5	4.45	n-Propanol	183134	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 6:29:41 PM
Bound File Name = SIM05112012.0020.RAW
Sample Name = CCS
Date Taken = 5/11/2012 6:29:34 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

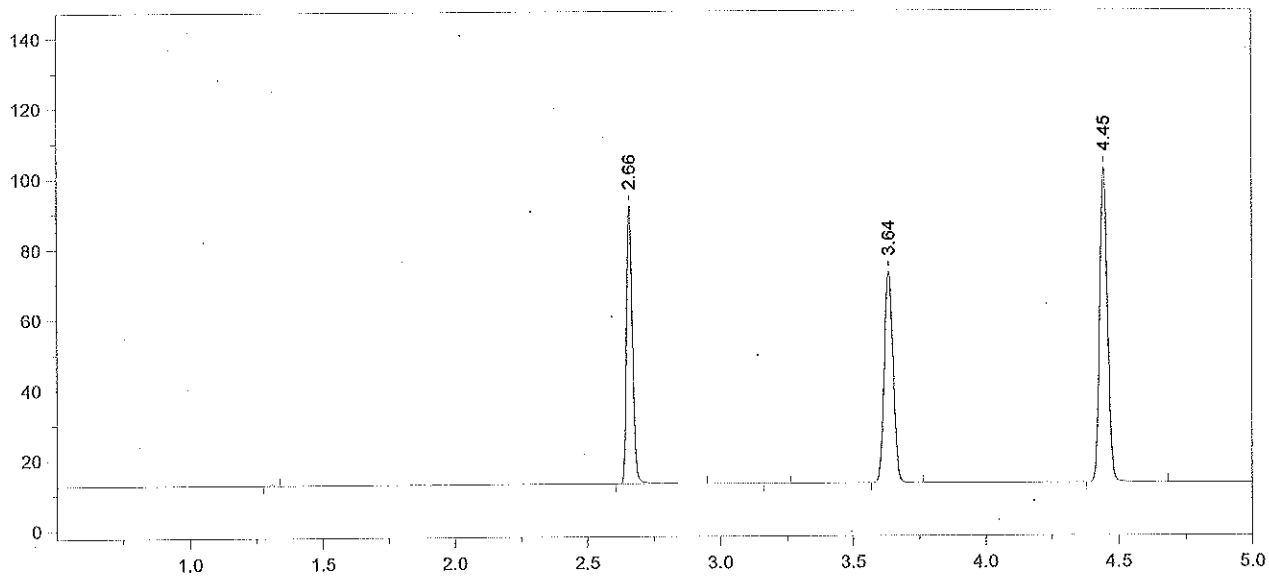
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	85552	0.0862	0.0703
4	3.64	t-Butanol	133640	1.0251	0.8367
5	4.45	n-Propanol	184249	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 6:43:20 PM
Bound File Name = SIM05112012.0021.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 6:43:14 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

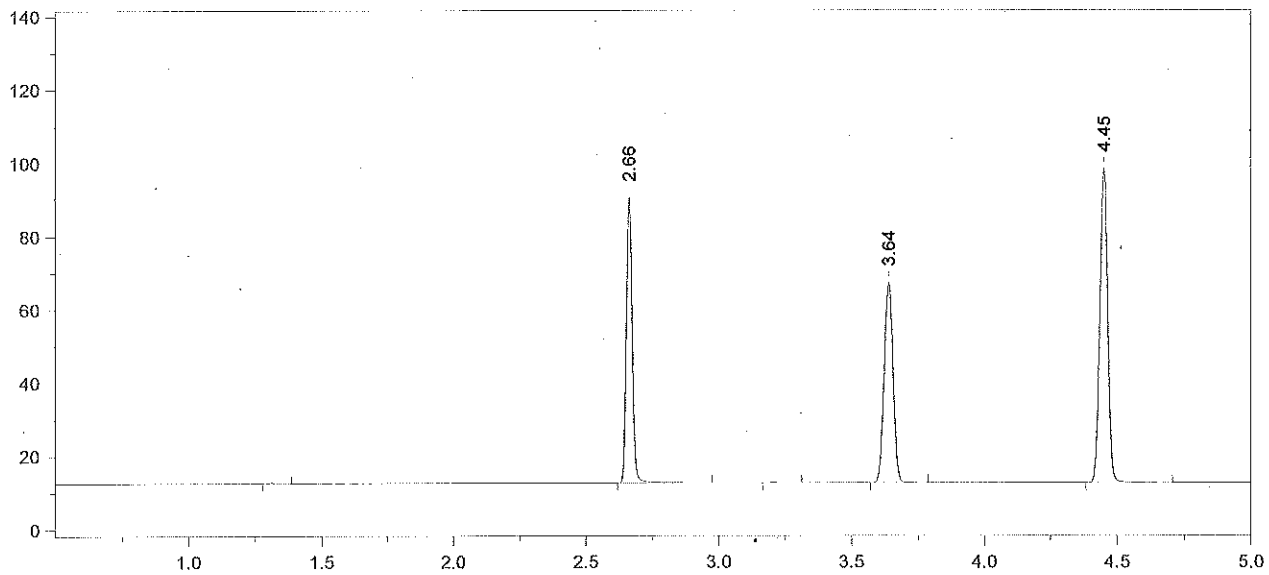
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	122647	0.1214	0.0991
4	3.64	t-Butanol	130798	0.9858	0.8046
5	4.45	n-Propanol	187523	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 7:01:08 PM
Bound File Name = SIM05112012.0022.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 7:00:58 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

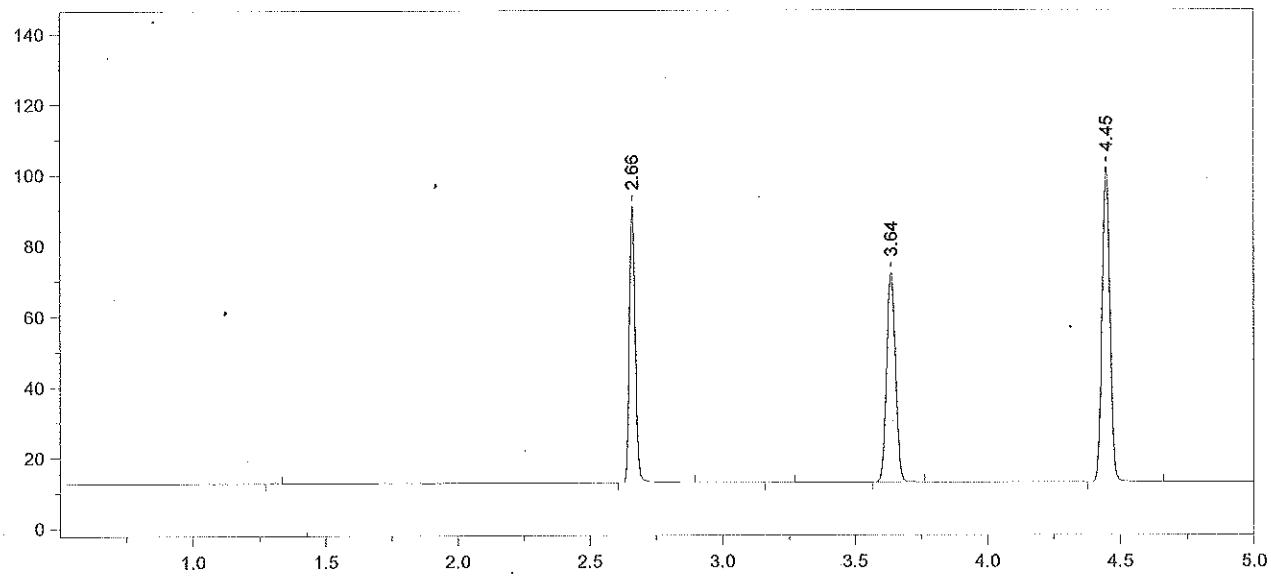
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	121485	0.1194	0.0974
4	3.64	t-Butanol	138259	1.0344	0.8443
5	4.45	n-Propanol	188909	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 7:14:54 PM
Bound File Name = SIM05112012.0023.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 7:14:44 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

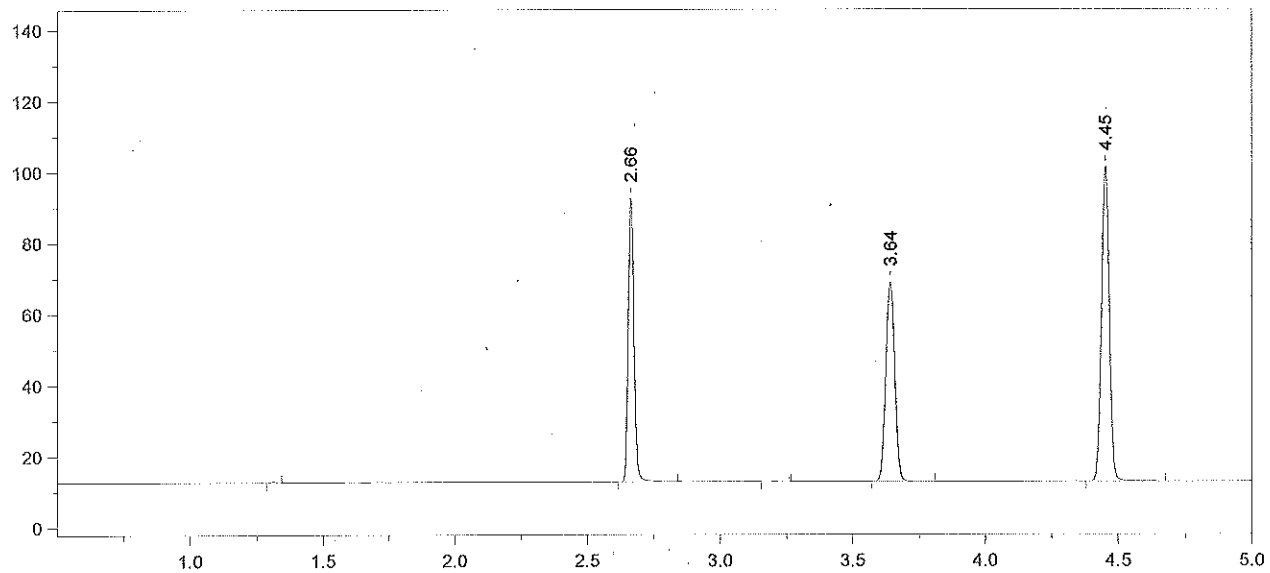
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119964	0.1227	0.1002
4	3.64	t-Butanol	126194	0.9832	0.8025
5	4.45	n-Propanol	181398	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 7:32:30 PM
Bound File Name = SIM05112012.0024.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 7:32:23 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

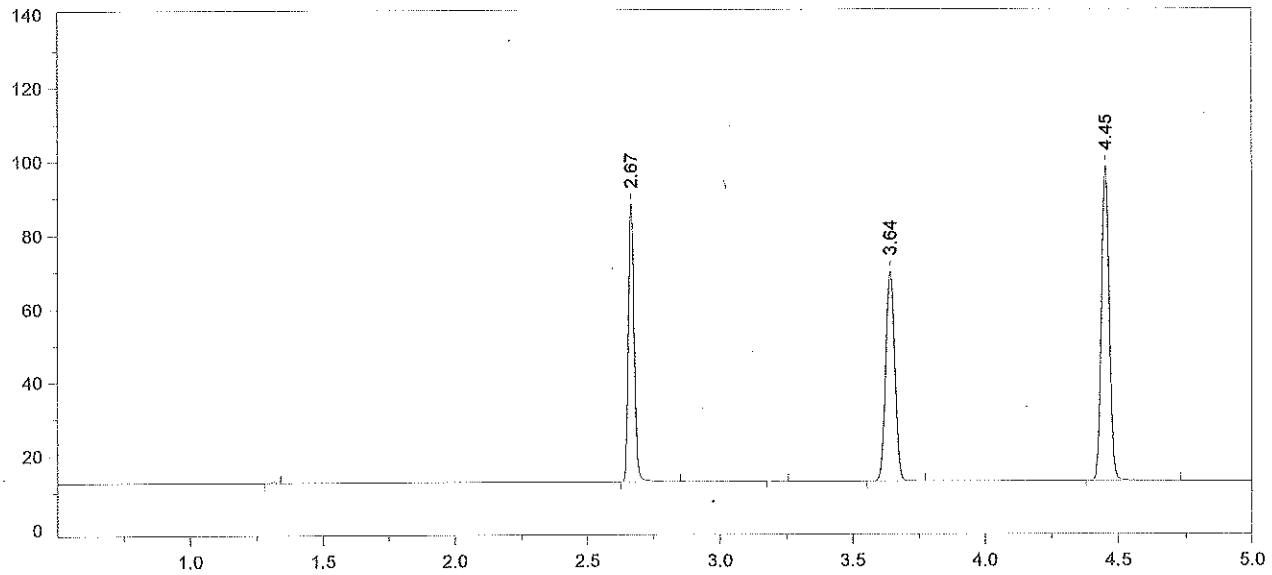
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119775	0.1183	0.0965
4	3.64	t-Butanol	136875	1.0290	0.8399
5	4.45	n-Propanol	187988	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 7:46:27 PM
Bound File Name = SIM05112012.0025.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 7:46:13 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

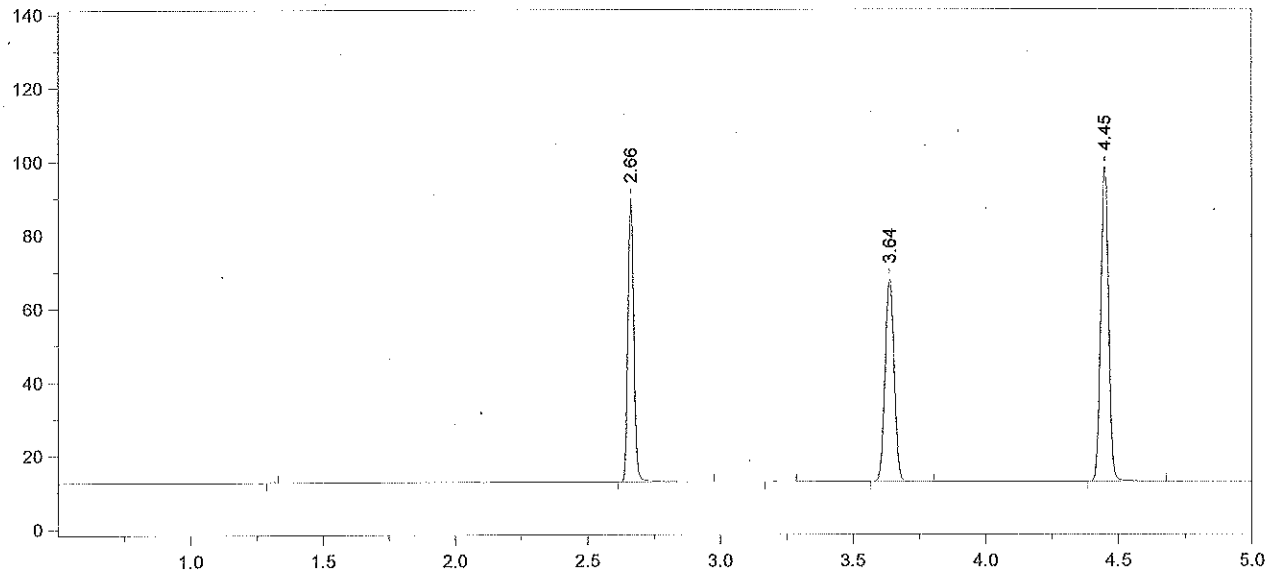
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	122886	0.1216	0.0992
4	3.64	t-Butanol	129881	0.9785	0.7986
5	4.45	n-Propanol	187604	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 8:03:59 PM
Bound File Name = SIM05112012.0026.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 8:03:47 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

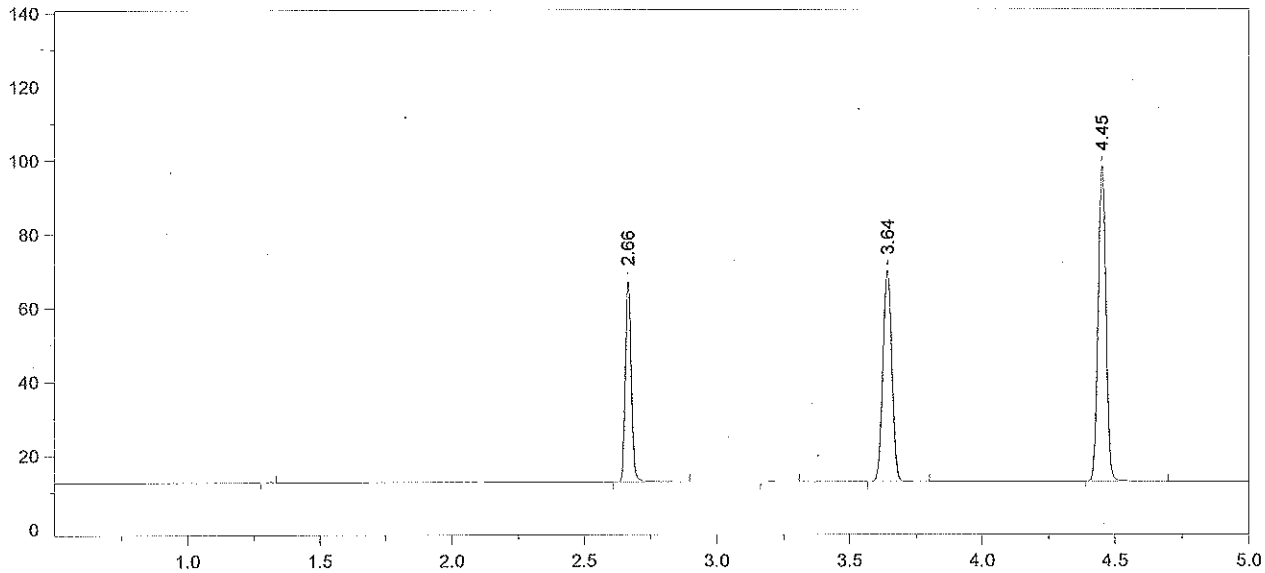
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	115813	0.1190	0.0971
4	3.64	t-Butanol	131715	1.0302	0.8409
5	4.45	n-Propanol	180693	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 8:17:10 PM
Bound File Name = SIM05112012.0027.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/11/2012 8:16:57 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

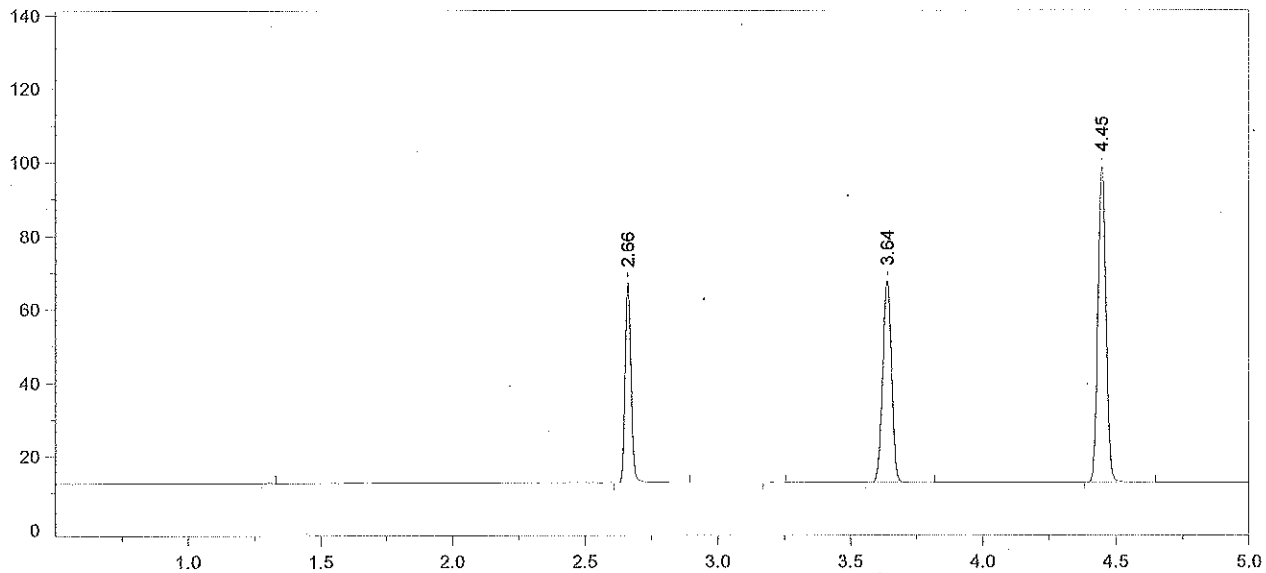
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119515	0.1216	0.0993
4	3.64	t-Butanol	127173	0.9856	0.8044
5	4.45	n-Propanol	182364	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 8:35:19 PM
Bound File Name = SIM05112012.0028.RAW
Sample Name = CCS
Date Taken = 5/11/2012 8:35:11 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	84459	0.0863	0.0704
4	3.64	t-Butanol	132310	1.0293	0.8401
5	4.45	n-Propanol	181677	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/11/2012
Today's Time = 8:48:37 PM
Bound File Name = SIM05112012.0029.RAW
Sample Name = CCS
Date Taken = 5/11/2012 8:48:24 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05112012.cal
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	84202	0.0855	0.0698
4	3.64	t-Butanol	126359	0.9773	0.7977
5	4.45	n-Propanol	182726	1.0000	0.8162

Headspace Alcohol Analysis Standards Coversheet

Analyst: AWB Date: 5/14/12

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

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		0.086	(Y) N	
6	Standard D		0.208	(Y) N	
7	Standard E		0.415	(Y) N	
8	Aqueous QC		0.0967	(Y) N	
9	Aqueous QC		0.1001	(Y) N	$\bar{x}$ = 0.098 ✓

5/15/2012

File Name: C:\Methods\SimCal 05142012.cal
Version: 2

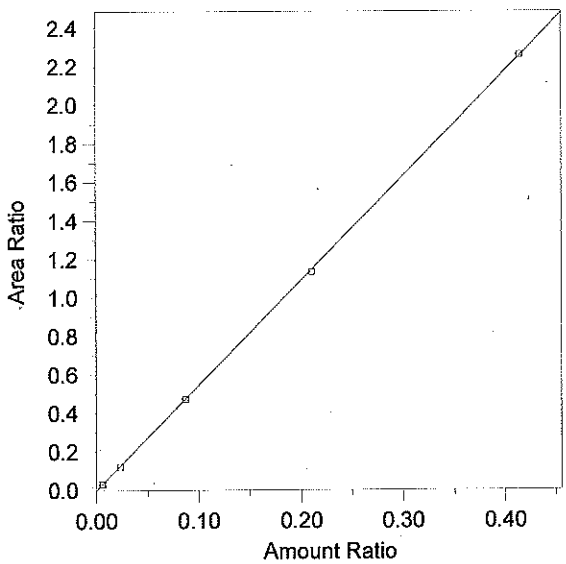
Creator:
Description:
Reason for change:

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

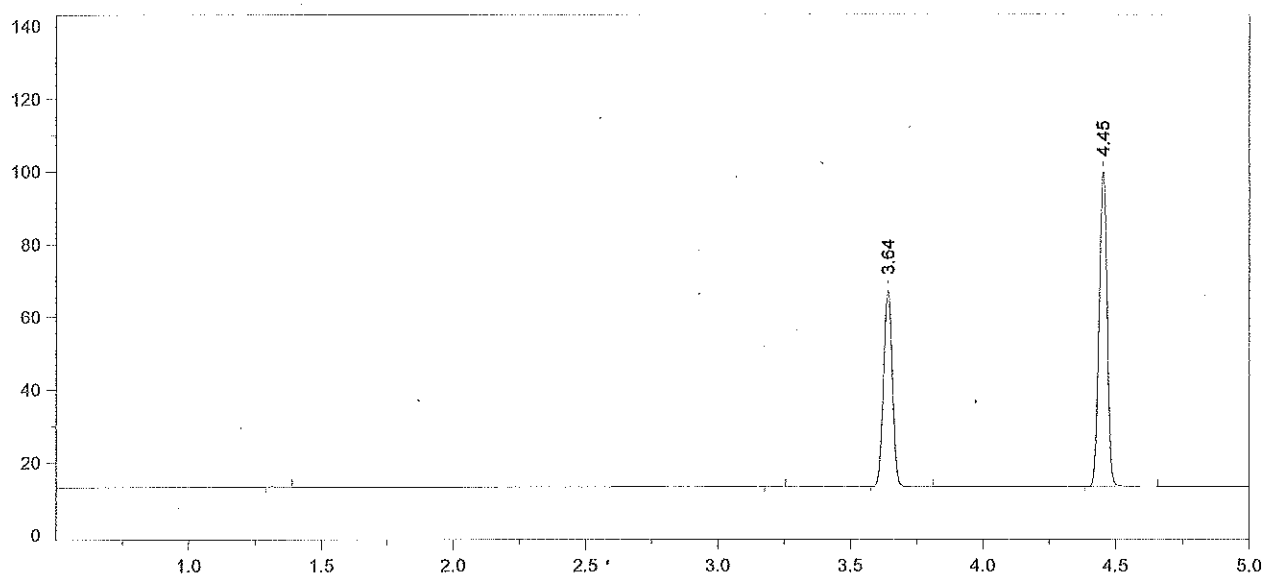
Single peak quantification by area

Y = 5.439771 X + 0

Linear fit with equal weighting, forced to origin

Coefficient of determination:	0.999937
Average error:	1.388%
Average CF:	5.370843
RSD:	1.448%

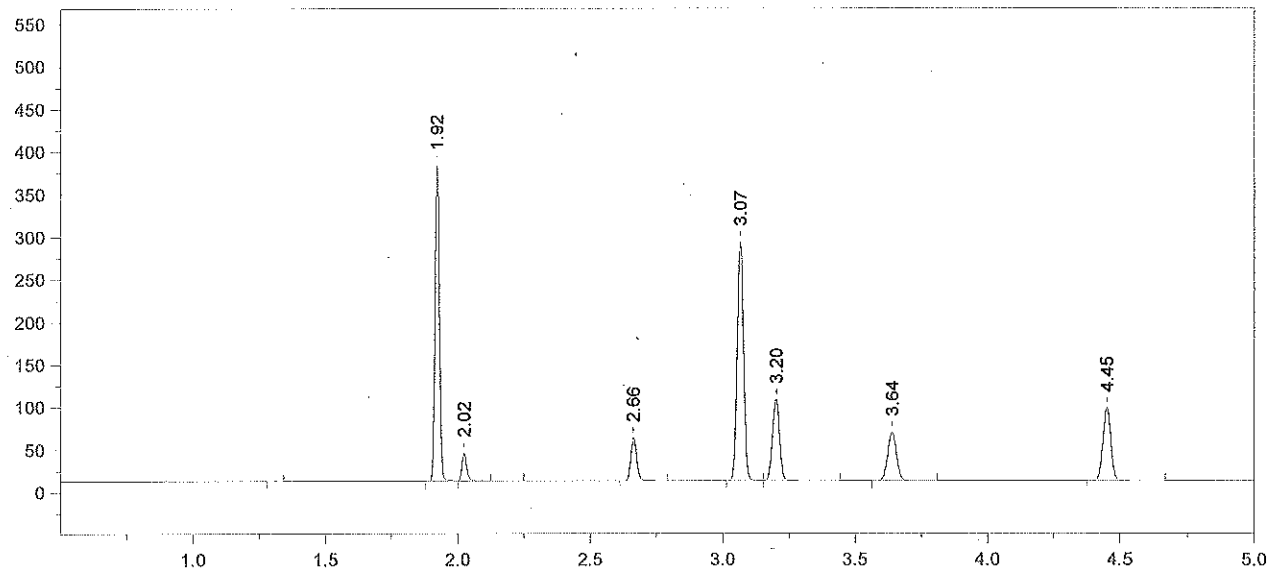
Level	Amount	Response	Cal Factor	Error, %	Amount Ratio	Response Ratio	Source	Date and time
1	(0.081)	(85146)	--	--	0.081	85146	Manual	5/11/2012 8:03:03 AM
2	0.0059	5623.333	953107.3	-1.685	0.0059	3.155391E-02	C:\Alcohol Data\SIM05142012\SIM05142012.0003.BND	5/14/2012 4:39:39 PM
3	0.0235	22455.65	955559.6	-3.461	0.0235	0.1234108	C:\Alcohol Data\SIM05142012\SIM05142012.0004.BND	5/14/2012 4:57:15 PM
4	0.0869	83414.02	959885.2	-0.445	0.0869	0.4706108	C:\Alcohol Data\SIM05142012\SIM05142012.0005.BND	5/14/2012 5:11:11 PM
5	0.2107	200580.3	951971	-1.046	0.2107	1.134167	C:\Alcohol Data\SIM05142012\SIM05142012.0006.BND	5/14/2012 5:28:37 PM
6	0.4144	401145.7	968015.6	0.302	0.4144	2.261039	C:\Alcohol Data\SIM05142012\SIM05142012.0007.BND	5/14/2012 5:41:49 PM



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012 Today's Time = 7:34:20 AM
Bound File Name = SIM05142012.0001.RAW
Sample Name = Blank
Date Taken = 5/14/2012 4:08:21 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal Calibration Version = 2

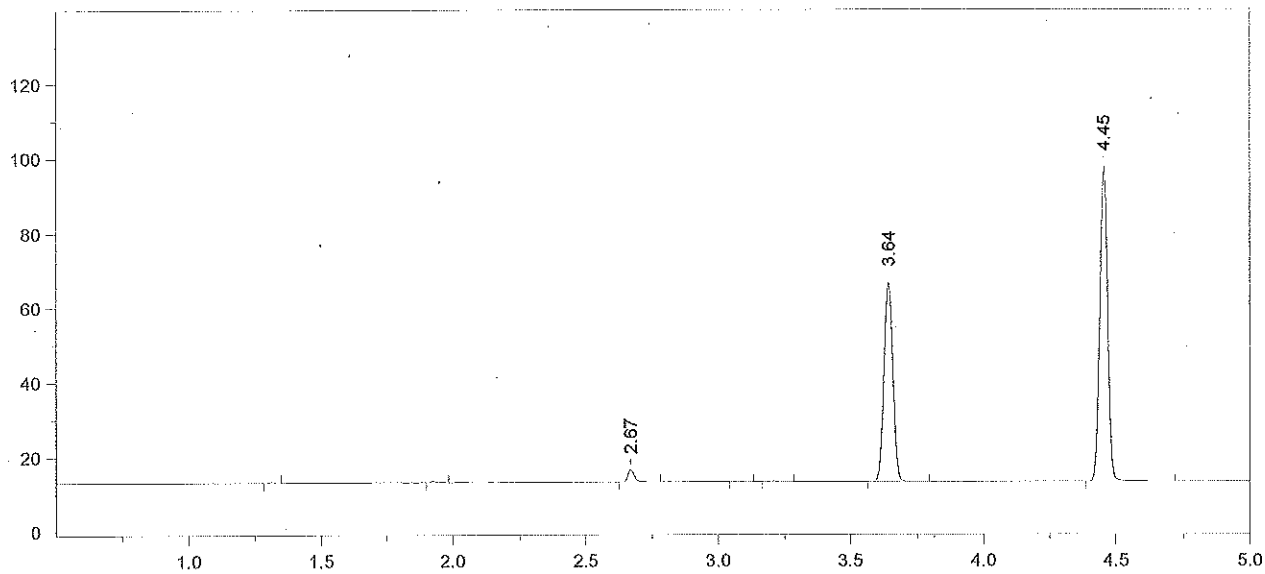
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	3.64	t-Butanol	124971	0.9544	0.7790
4	4.45	n-Propanol	184469	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012 Today's Time = 7:34:33 AM
Bound File Name = SIM05142012.0002.RAW
Sample Name = TMX
Date Taken = 5/14/2012 4:25:40 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal Calibration Version = 2

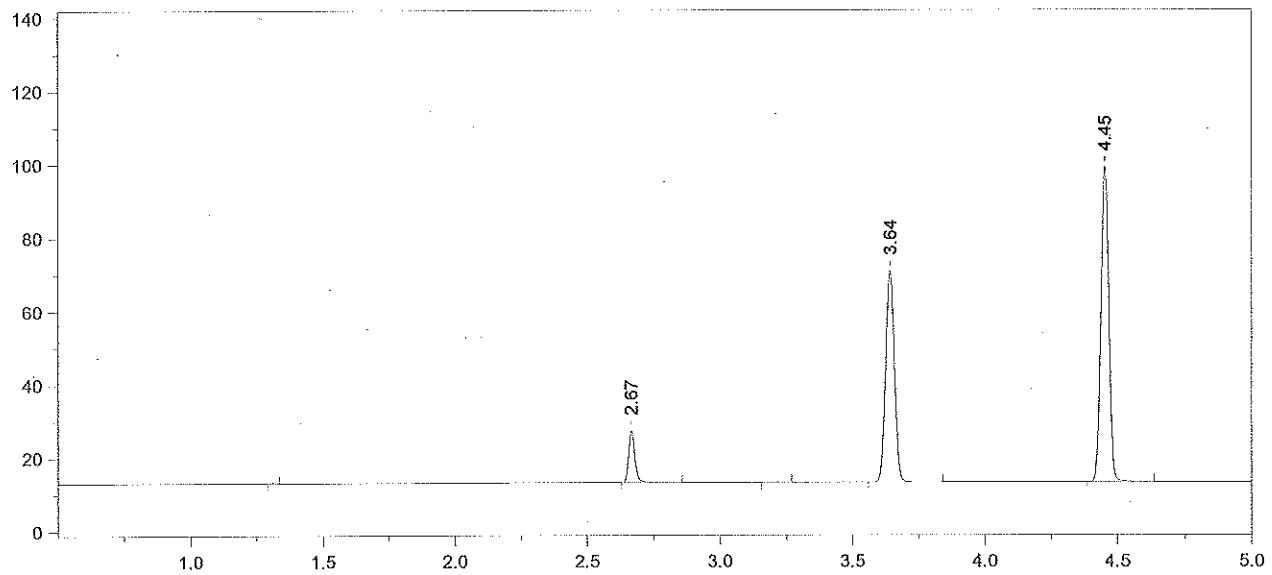
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	1.92	Acetaldehyde	429101	0.0900	0.0735
3	2.02	Methanol	40101	0.0920	0.0751
4	2.66	Ethanol	77500	0.0786	0.0642
5	3.07	Acetone	474248	0.0920	0.0751
6	3.20	Isopropanol	179140	0.1230	0.1004
7	3.64	t-Butanol	131076	1.0189	0.8316
8	4.45	n-Propanol	181245	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:34:43 AM
Bound File Name = SIM05142012.0003.RAW
Sample Name = STD A
Date Taken = 5/14/2012 4:39:28 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

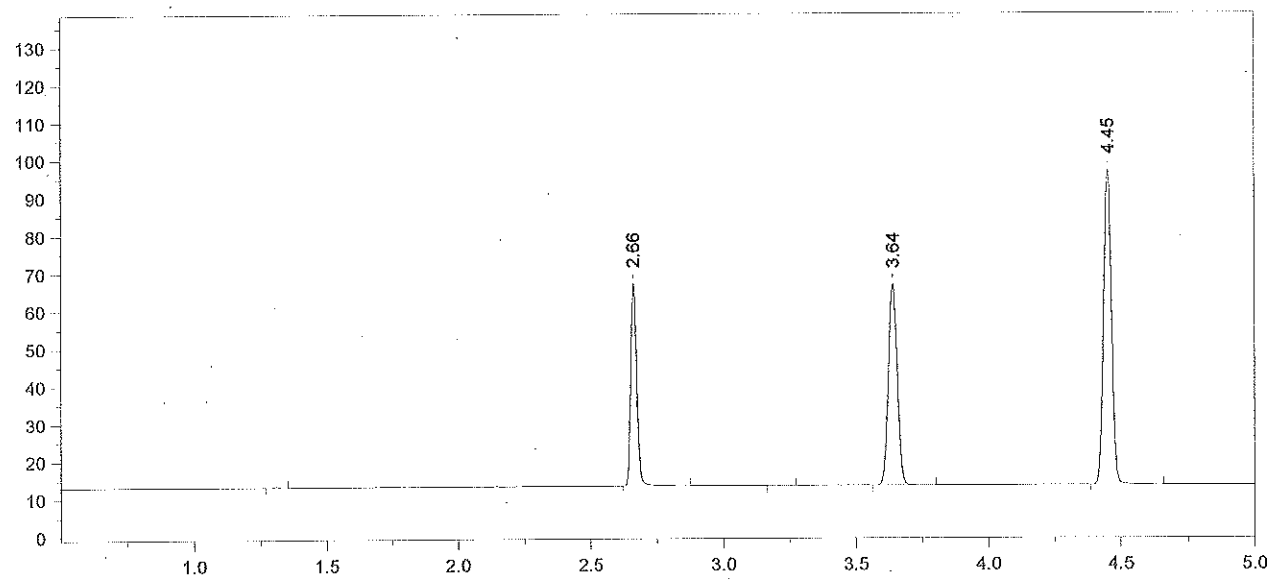
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
3	2.67	Ethanol	05623	0.0058	0.0047
6	3.64	t-Butanol	123553	0.9767	0.7972
7	4.45	n-Propanol	178214	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:34:52 AM
Bound File Name = SIM05142012.0004.RAW
Sample Name = STD B
Date Taken = 5/14/2012 4:57:04 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

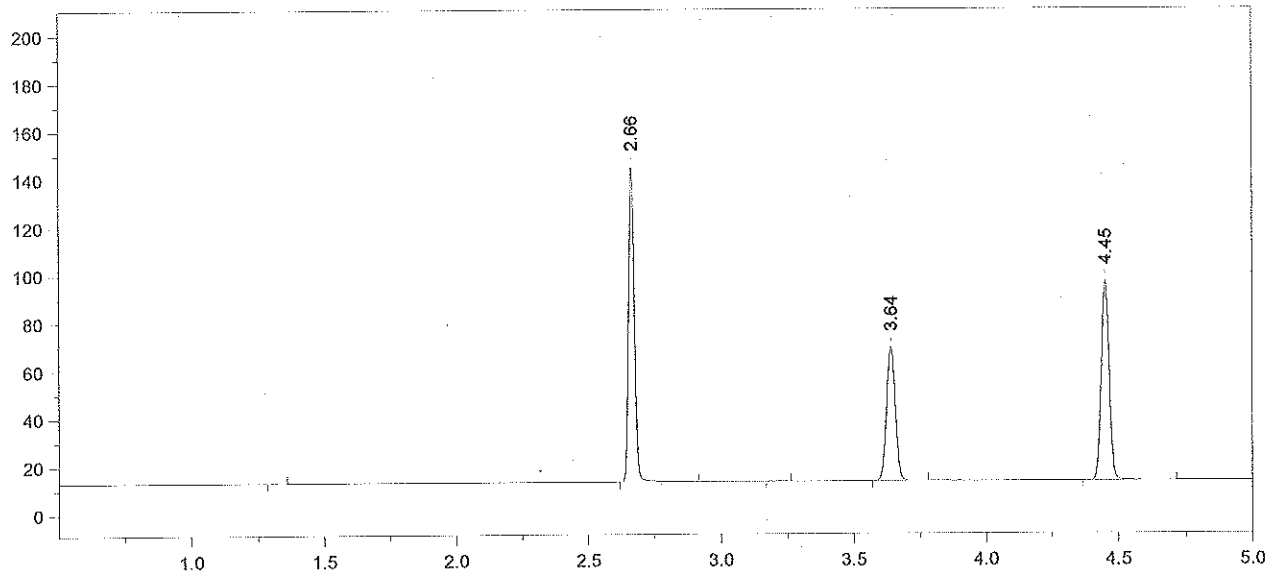
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	22456	0.0227	0.0185
4	3.64	t-Butanol	132952	1.0294	0.8402
5	4.45	n-Propanol	181959	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:35:03 AM
Bound File Name = SIM05142012.0005.RAW
Sample Name = STD C
Date Taken = 5/14/2012 5:10:57 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

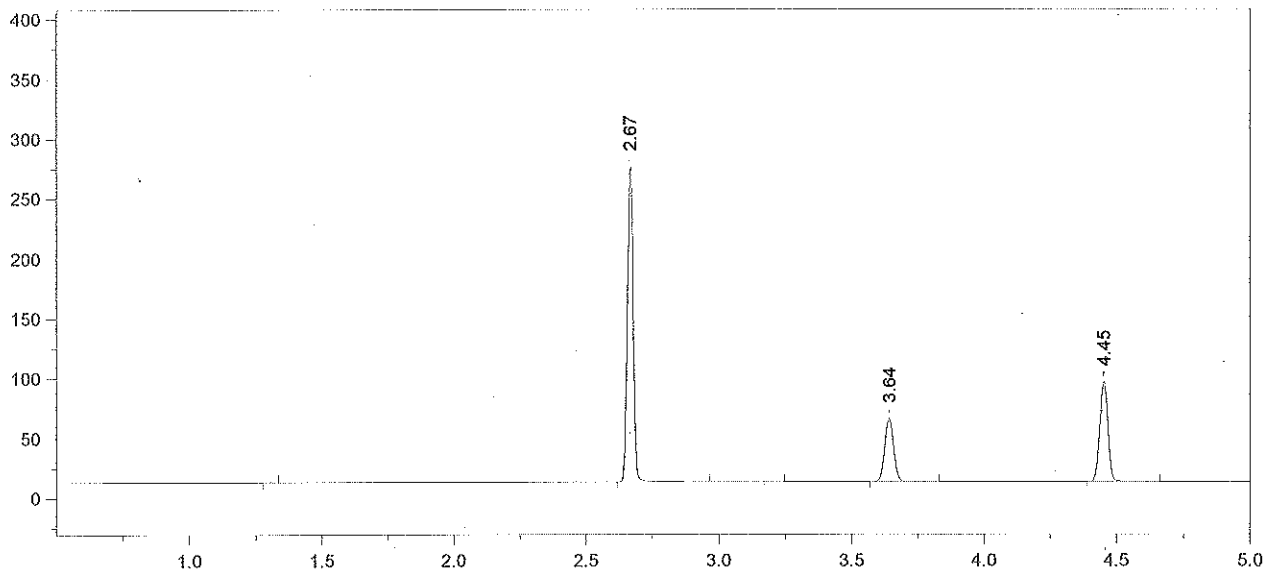
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	83414	0.0865	0.0706
4	3.64	t-Butanol	123458	0.9813	0.8009
5	4.45	n-Propanol	177246	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:35:12 AM
Bound File Name = SIM05142012.0006.RAW
Sample Name = STD D
Date Taken = 5/14/2012 5:28:26 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

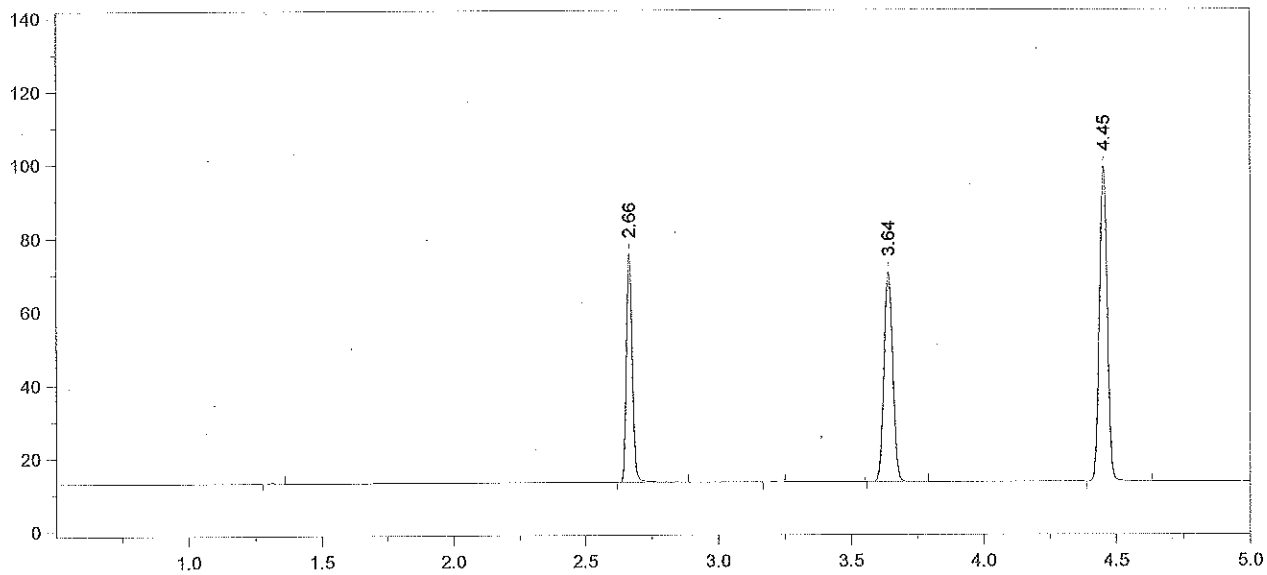
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	200580	0.2085	0.1702
4	3.64	t-Butanol	128407	1.0229	0.8349
5	4.45	n-Propanol	176853	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012 Today's Time = 7:35:22 AM
Bound File Name = SIM05142012.0007.RAW
Sample Name = STD E
Date Taken = 5/14/2012 5:41:42 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal Calibration Version = 2

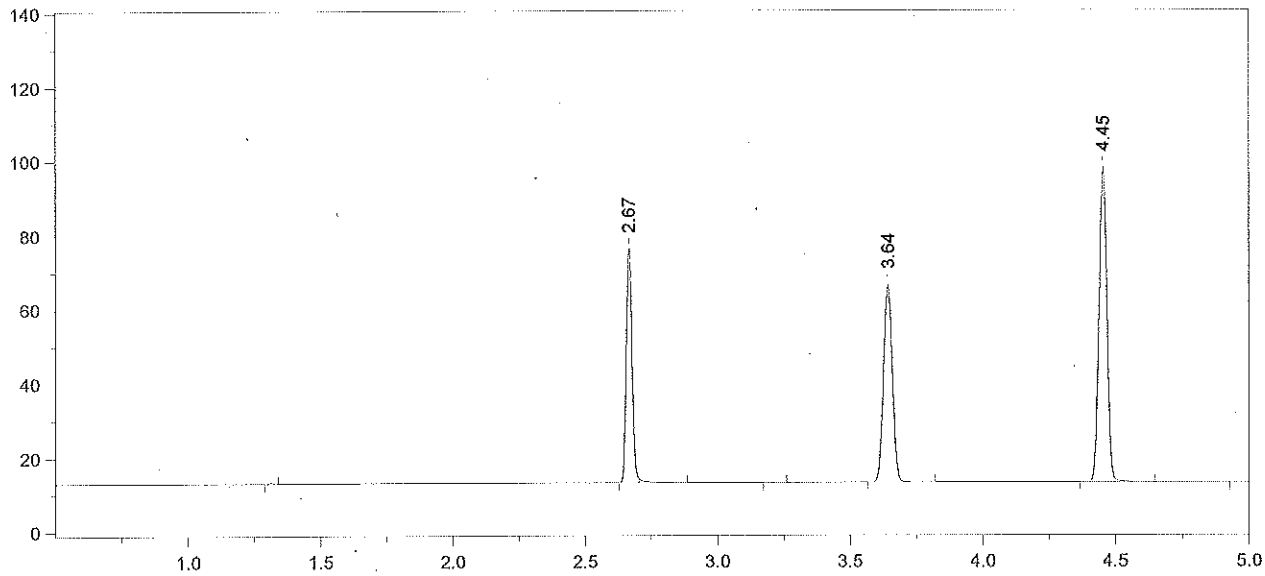
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	401146	0.4156	0.3393
4	3.64	t-Butanol	122249	0.9708	0.7923
5	4.45	n-Propanol	177417	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:35:32 AM
Bound File Name = SIM05142012.0008.RAW
Sample Name = AQ QC
Date Taken = 5/14/2012 5:59:50 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

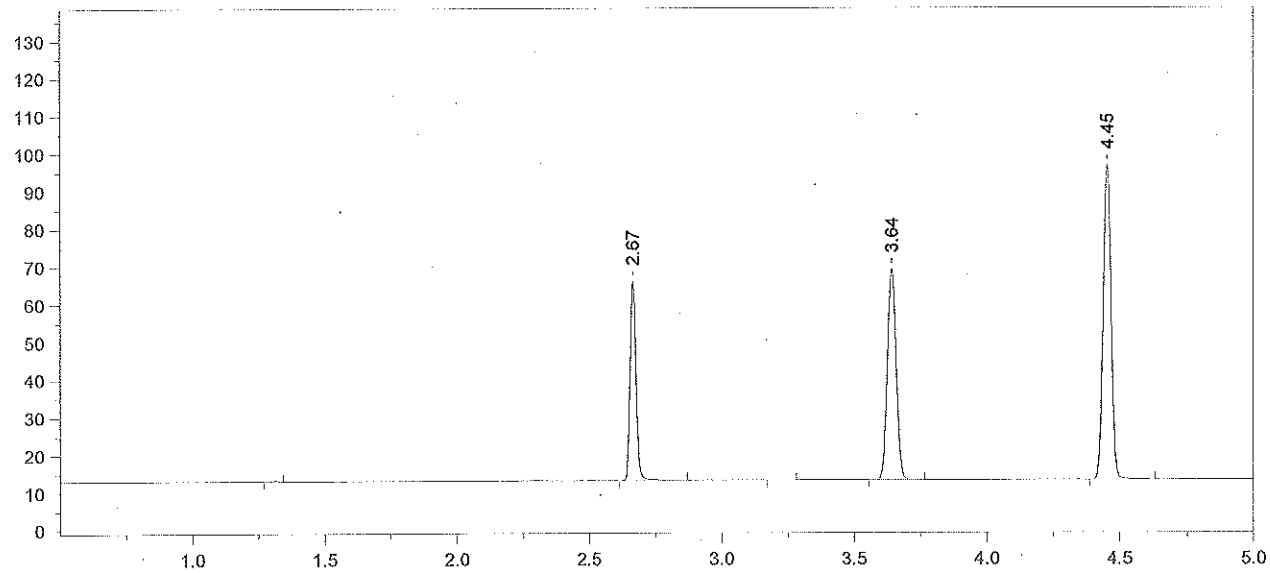
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	95667	0.0967	0.0790
4	3.64	t-Butanol	132103	1.0238	0.8356
5	4.45	n-Propanol	181793	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:35:42 AM
Bound File Name = SIM05142012.0009.RAW
Sample Name = AQ QC
Date Taken = 5/14/2012 6:13:43 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

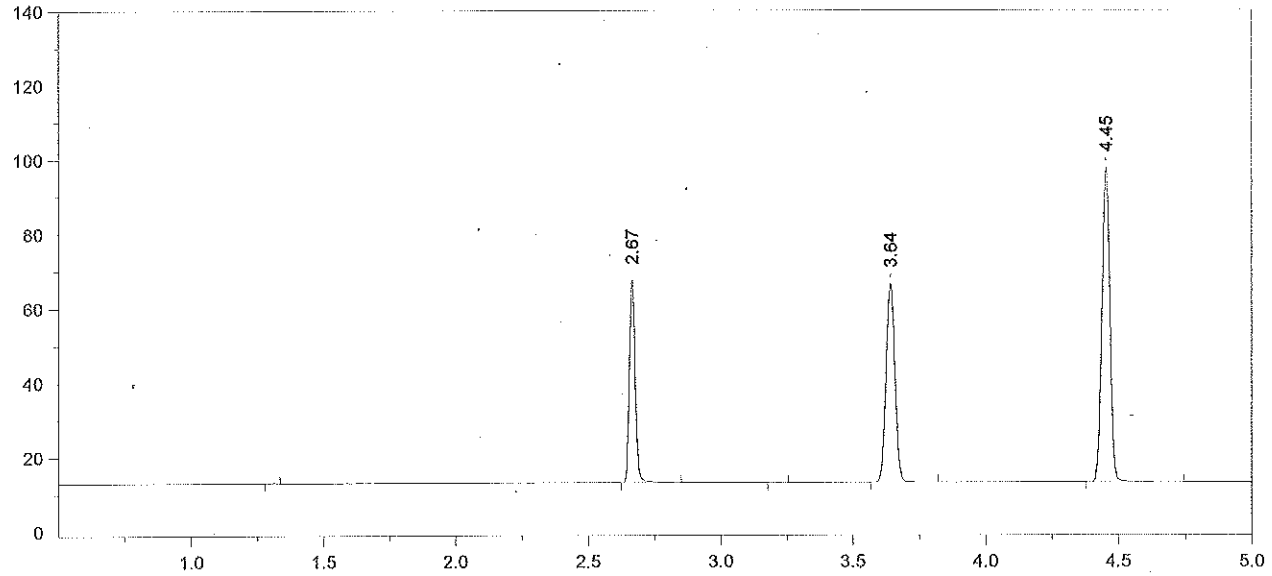
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	97717	0.1001	0.0817
4	3.64	t-Butanol	123294	0.9678	0.7899
5	4.45	n-Propanol	179482	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012 Today's Time = 7:35:52 AM
Bound File Name = SIM05142012.0010.RAW
Sample Name = CCS
Date Taken = 5/14/2012 6:31:14 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal Calibration Version = 2

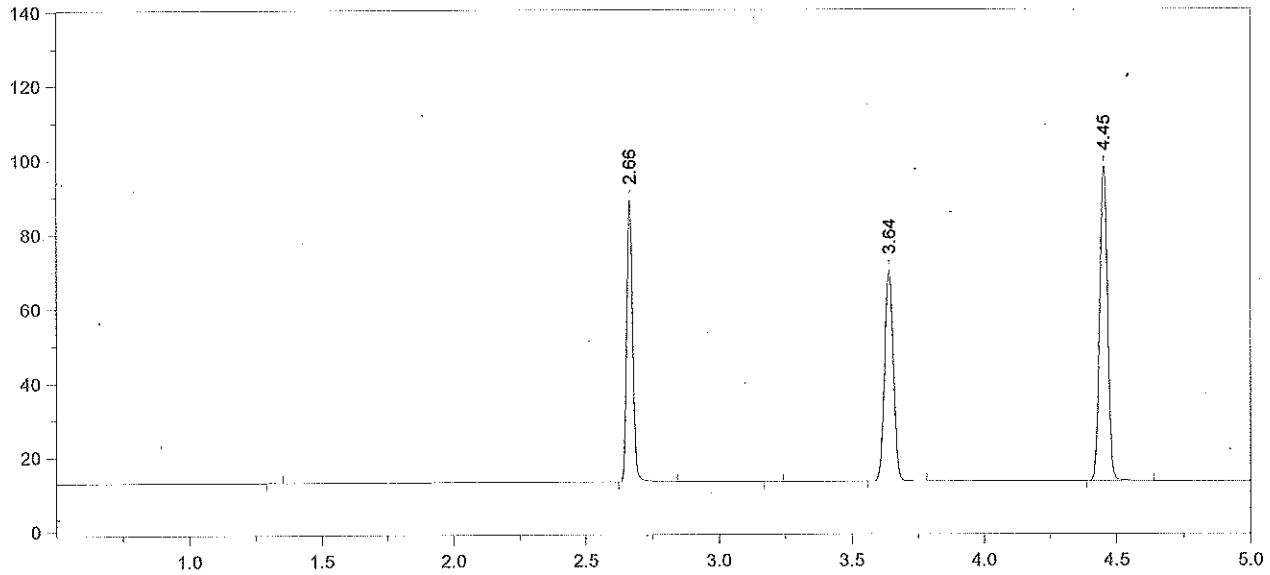
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	82156	0.0849	0.0693
4	3.64	t-Butanol	129388	1.0248	0.8364
5	4.45	n-Propanol	177878	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:02 AM
Bound File Name = SIM05142012.0011.RAW
Sample Name = CCS
Date Taken = 5/14/2012 6:45:05 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

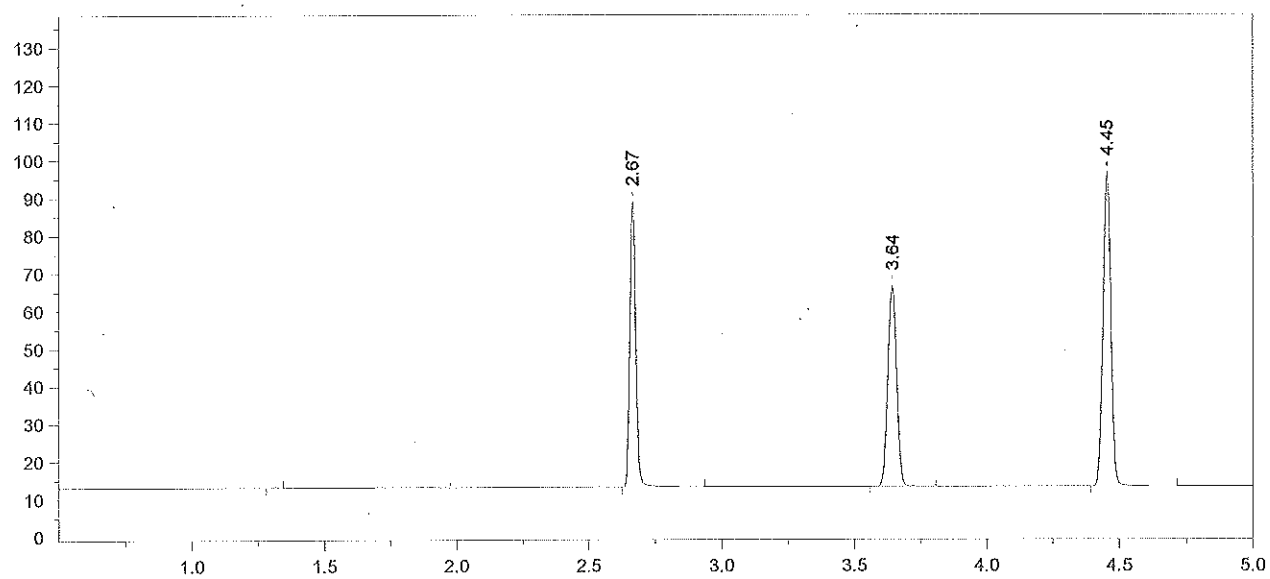
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	84751	0.0867 ✓	0.0708
4	3.64	t-Butanol	123450	0.9678	0.7899
5	4.45	n-Propanol	179705	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:12 AM
Bound File Name = SIM05142012.0012.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 7:02:39 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

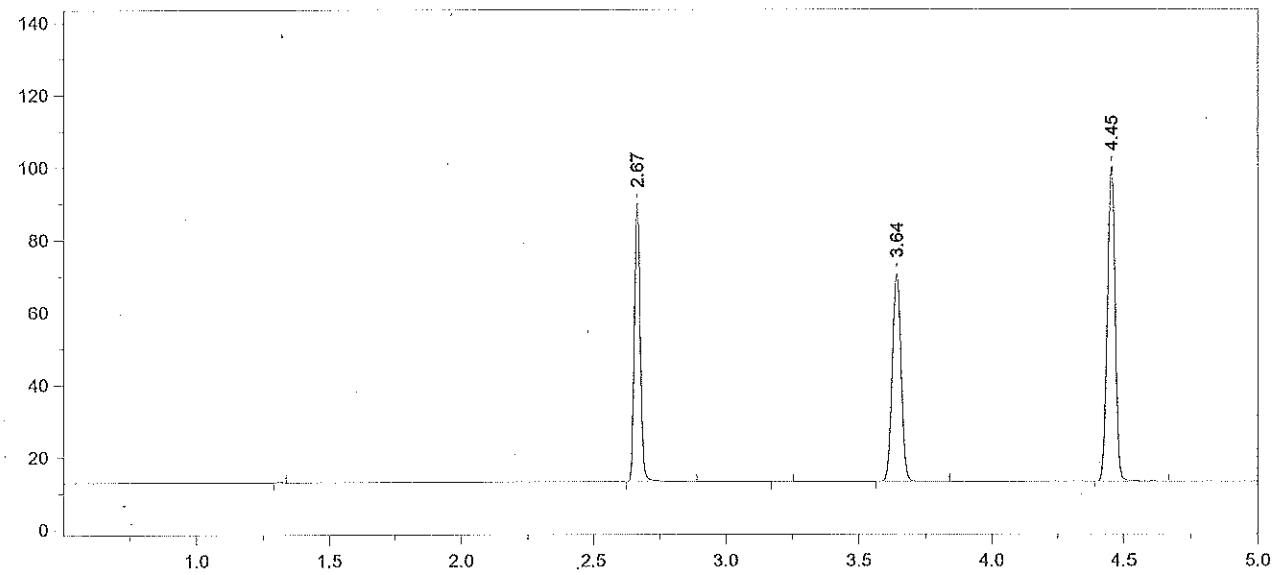
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115949	0.1184	0.0967
4	3.64	t-Butanol	131064	1.0260	0.8374
5	4.45	n-Propanol	179968	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:22 AM
Bound File Name = SIM05142012.0013.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 7:16:14 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

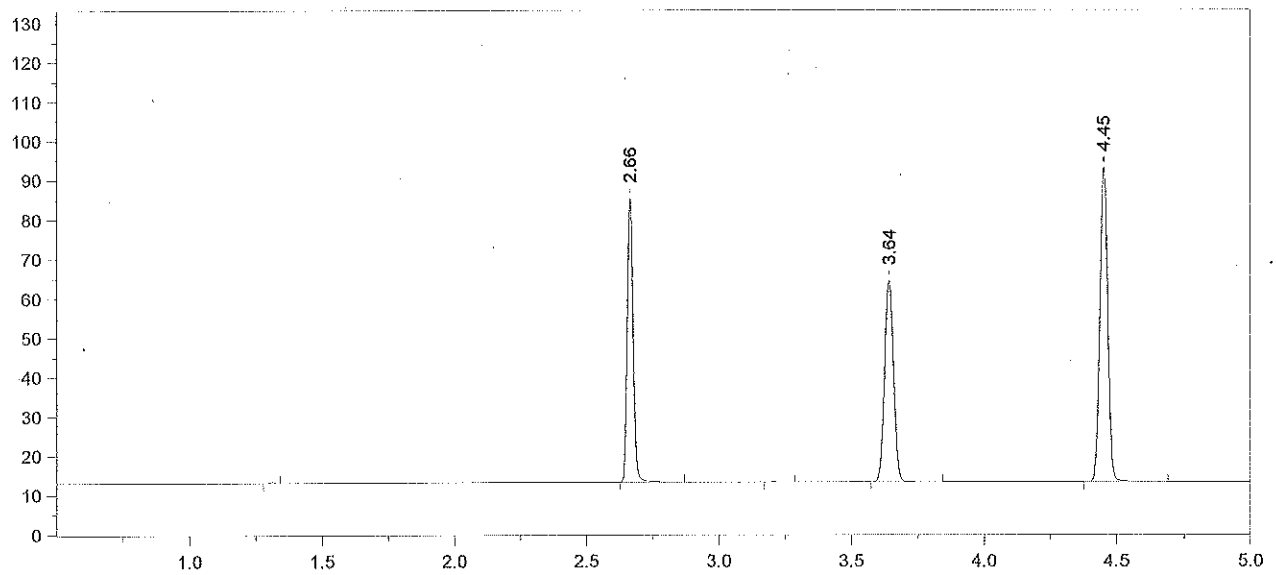
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	116749	0.1216	0.0992
3	3.64	t-Butanol	122590	0.9785	0.7986
4	4.45	n-Propanol	176514	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:31 AM
Bound File Name = SIM05142012.0014.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 7:32:23 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

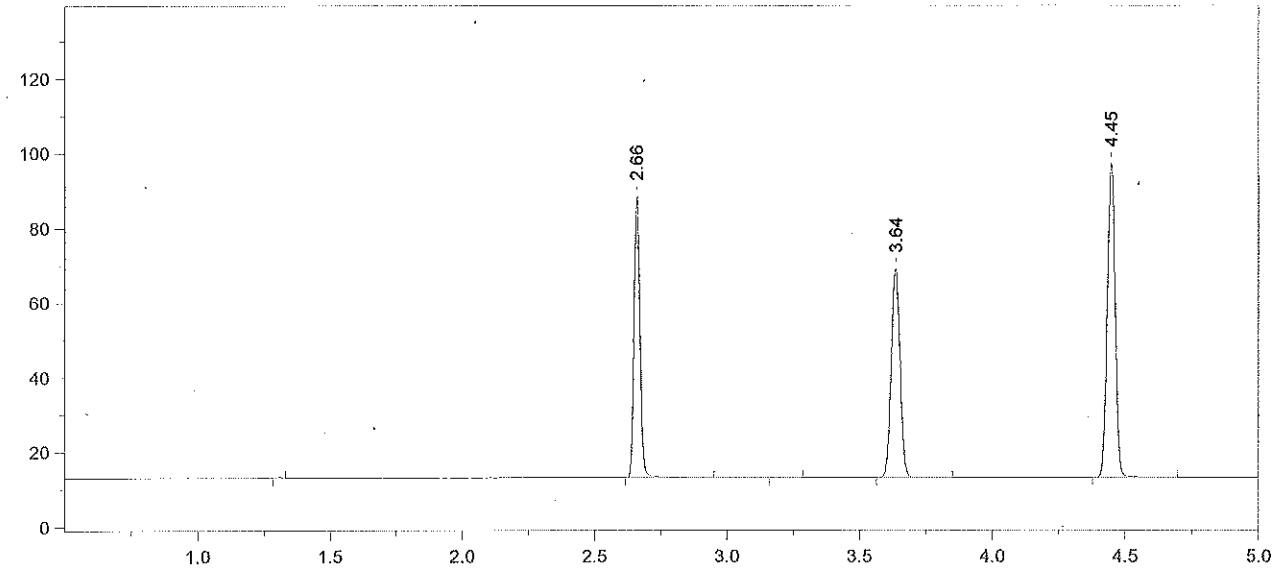
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.67	Ethanol	118587	0.1186	0.0968
4	3.64	t-Butanol	132877	1.0185	0.8313
5	4.45	n-Propanol	183802	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:40 AM
Bound File Name = SIM05142012.0015.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 7:47:51 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

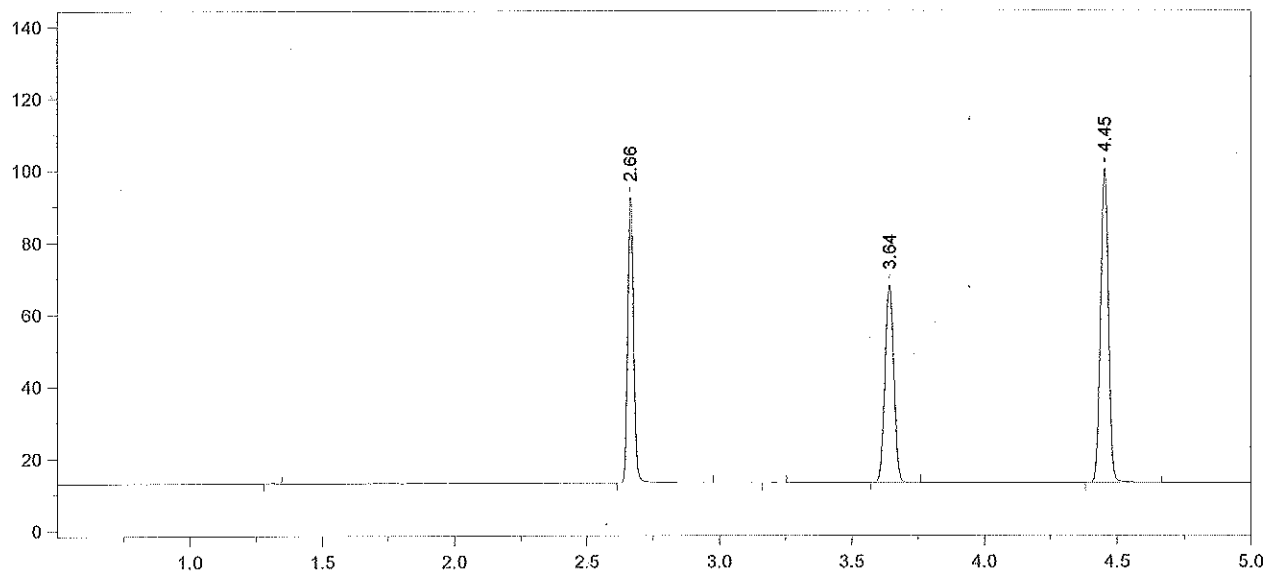
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	111841	0.1211	0.0988
4	3.64	t-Butanol	118765	0.9852	0.8041
5	4.45	n-Propanol	169838	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:36:51 AM
Bound File Name = SIM05142012.0016.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 8:03:55 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

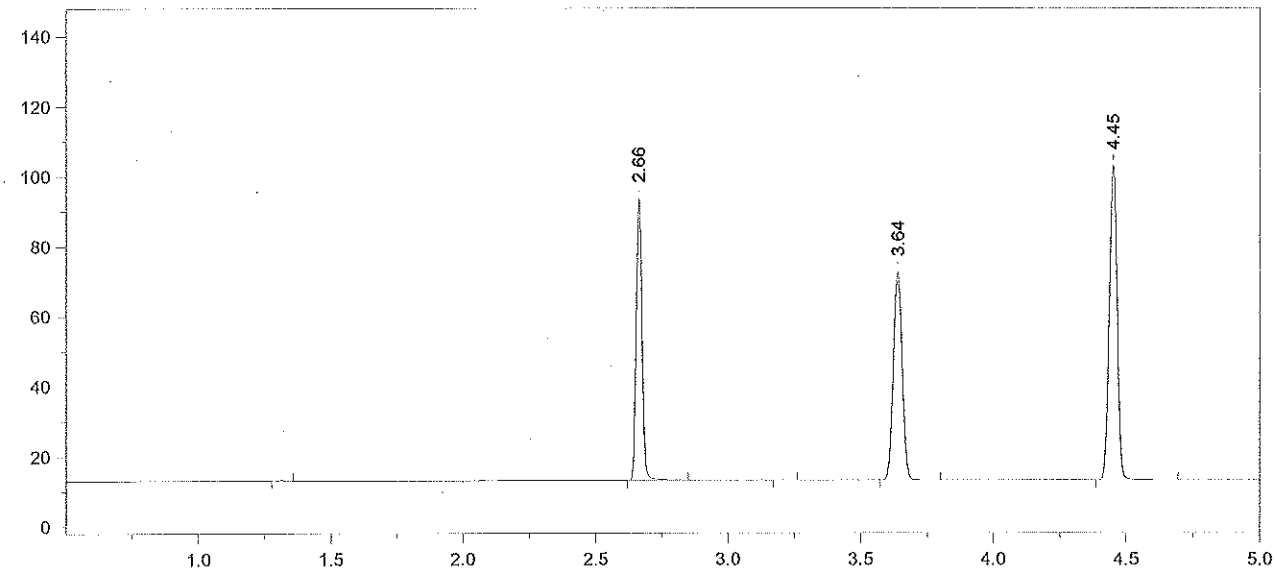
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115620	0.1196	0.0976
4	3.64	t-Butanol	129024	1.0226	0.8346
5	4.45	n-Propanol	177760	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:01 AM
Bound File Name = SIM05142012.0017.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 8:18:08 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

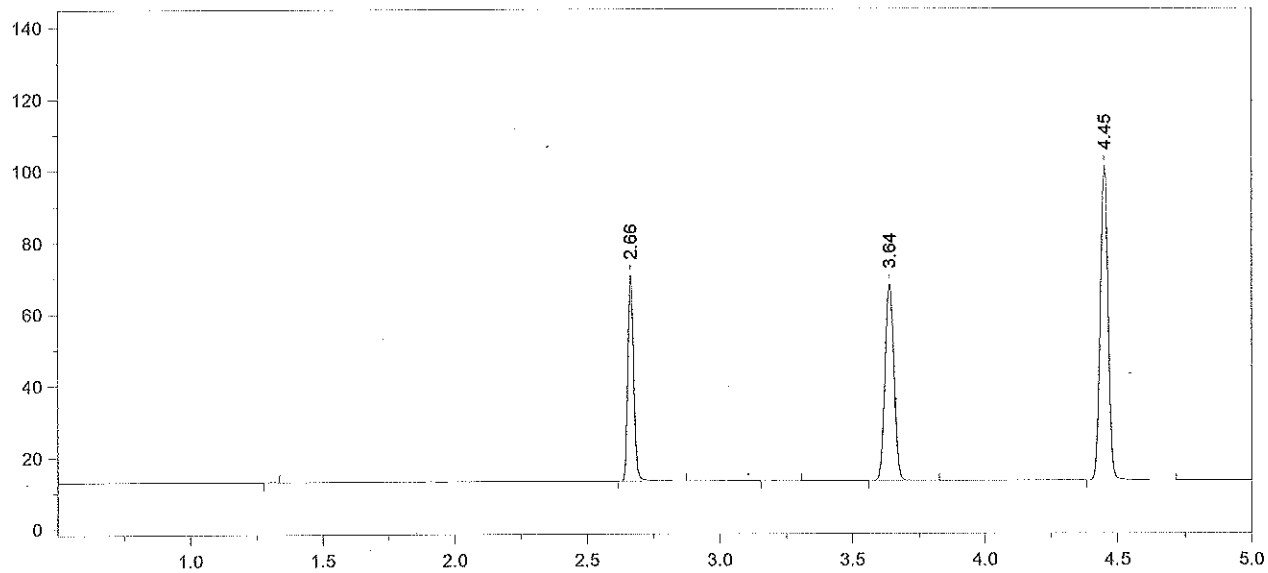
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	123020	0.1218	0.0994
4	3.64	t-Butanol	127259	0.9652	0.7878
5	4.45	n-Propanol	185745	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:11 AM
Bound File Name = SIM05142012.0018.RAW
Sample Name = 0.10 Ext Std TLC
Date Taken = 5/14/2012 8:33:36 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

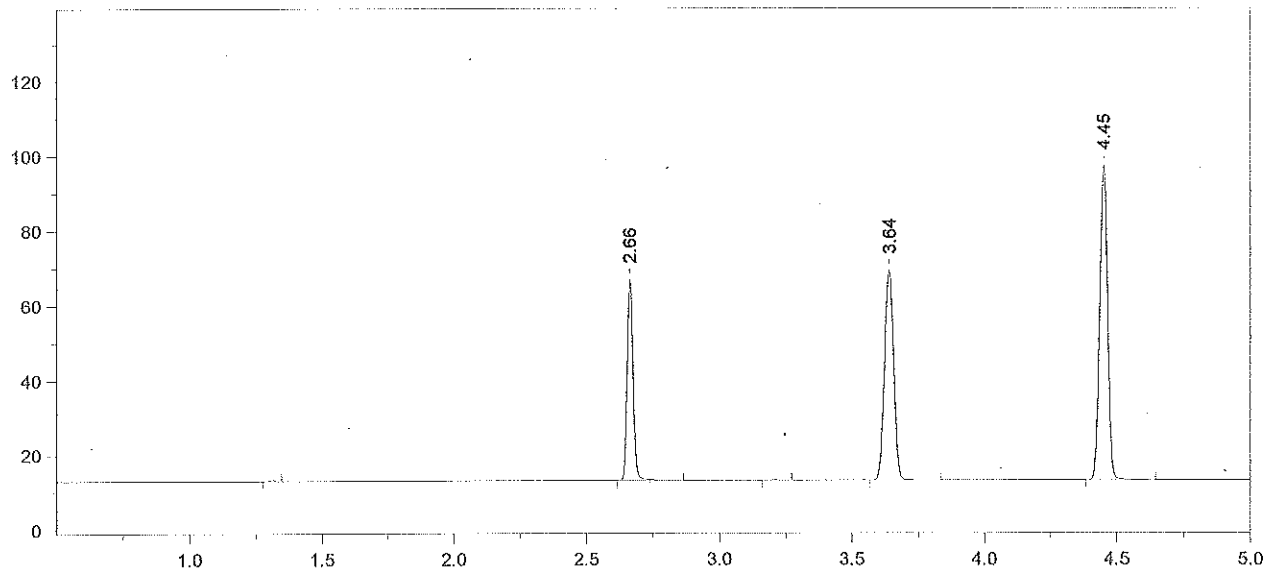
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	123149	0.1188	0.0970
4	3.64	t-Butanol	136984	1.0127	0.8265
5	4.45	n-Propanol	190577	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:21 AM
Bound File Name = SIM05142012.0019.RAW
Sample Name = CCS
Date Taken = 5/14/2012 8:48:57 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

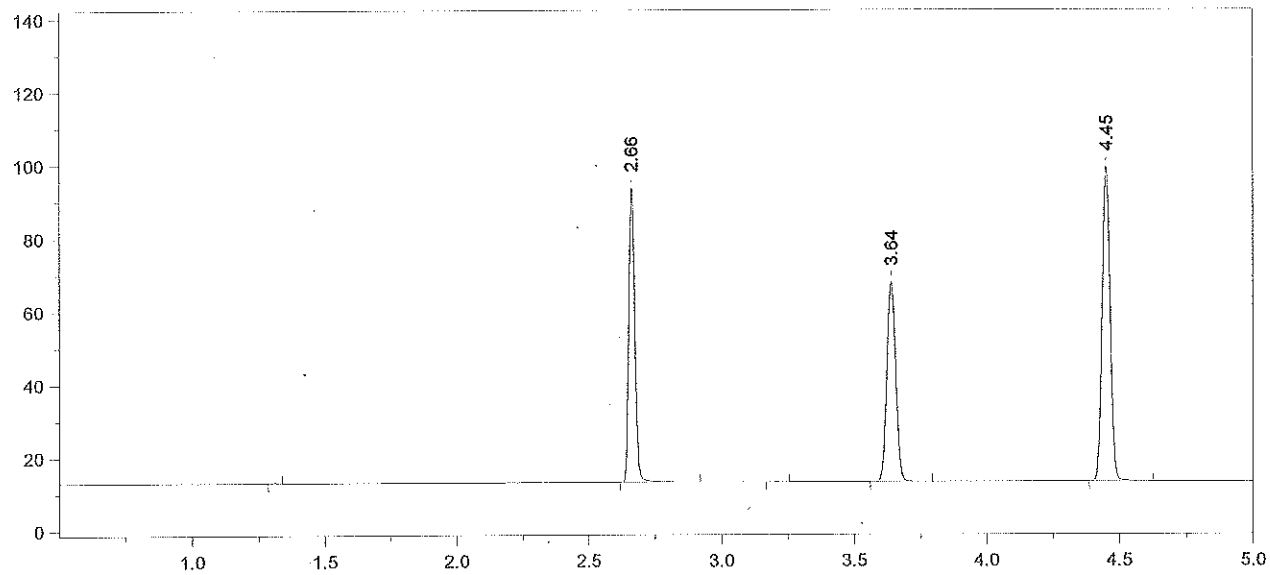
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	88502	0.0876	0.0715
4	3.64	t-Butanol	126998	0.9636	0.7865
5	4.45	n-Propanol	185680	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:31 AM
Bound File Name = SIM05142012.0020.RAW
Sample Name = CCS
Date Taken = 5/14/2012 9:05:08 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

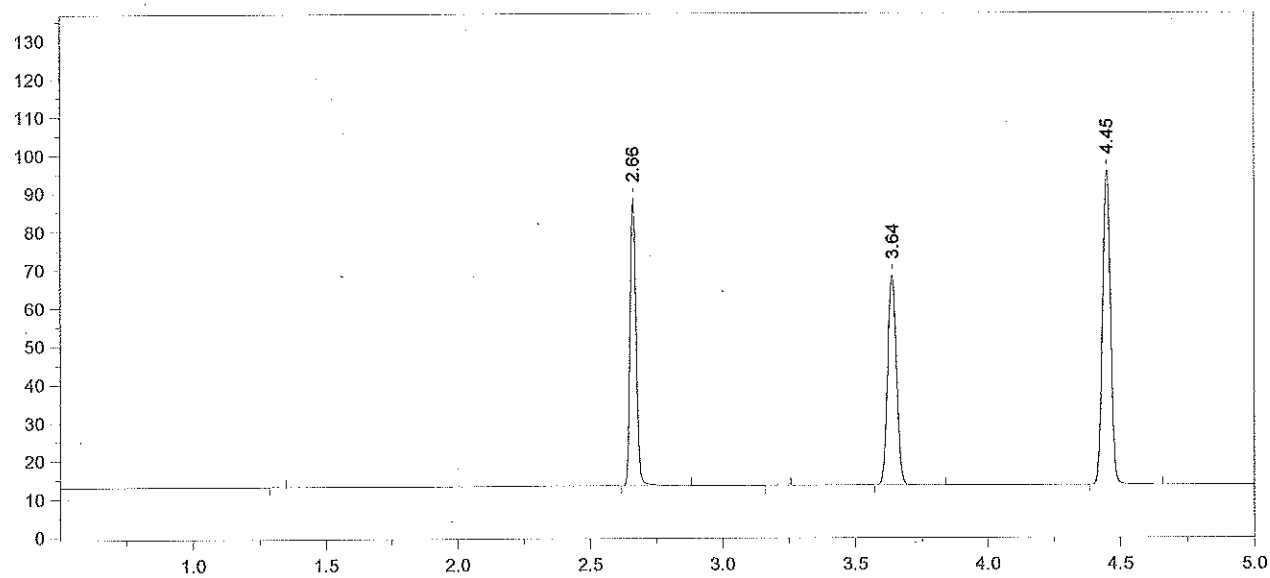
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	82907	0.0854	0.0697
4	3.64	t-Butanol	130000	1.0262	0.8376
5	4.45	n-Propanol	178470	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:41 AM
Bound File Name = SIM05142012.0021.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 9:18:41 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

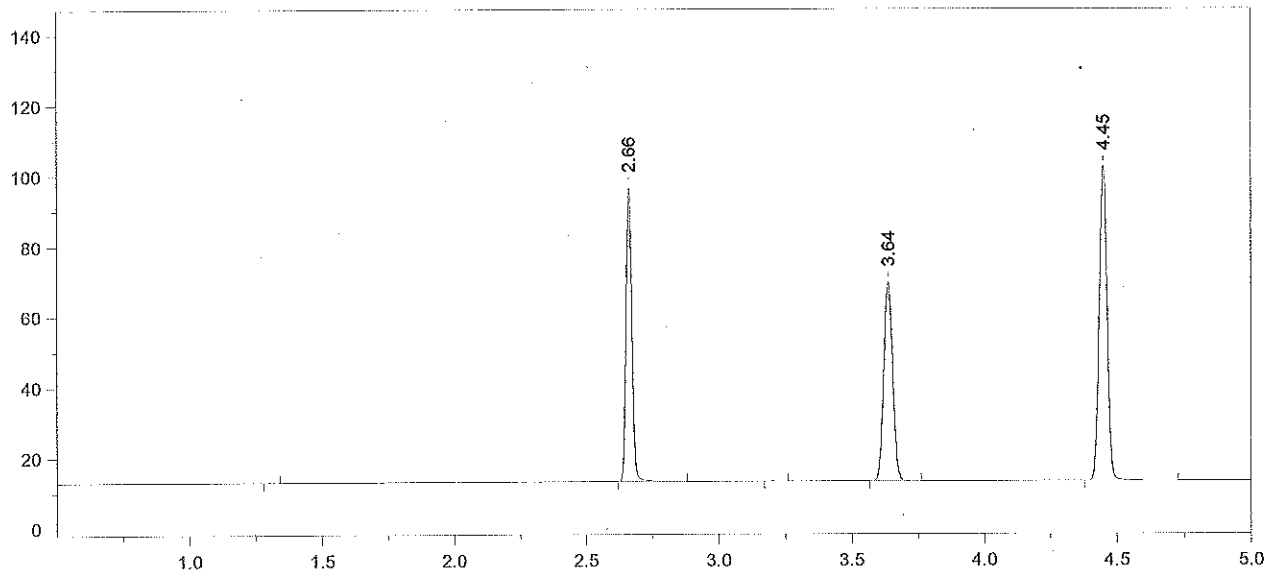
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	123609	0.1244	0.1016
4	3.64	t-Butanol	126295	0.9743	0.7952
5	4.45	n-Propanol	182620	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:37:51 AM
Bound File Name = SIM05142012.0022.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 9:36:33 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	115922	0.1218	0.0994
4	3.64	t-Butanol	127724	1.0287	0.8396
5	4.45	n-Propanol	174926	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

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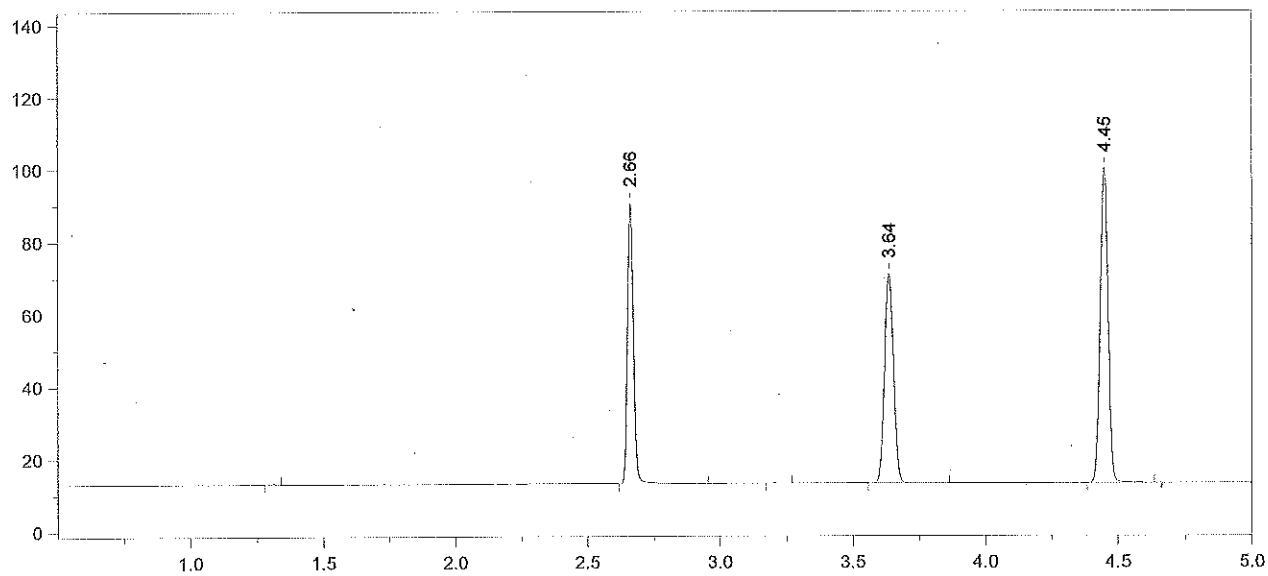
Today's Time = 7:38:01 AM
Bound File Name = SIM05142012.0023.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 9:50:08 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

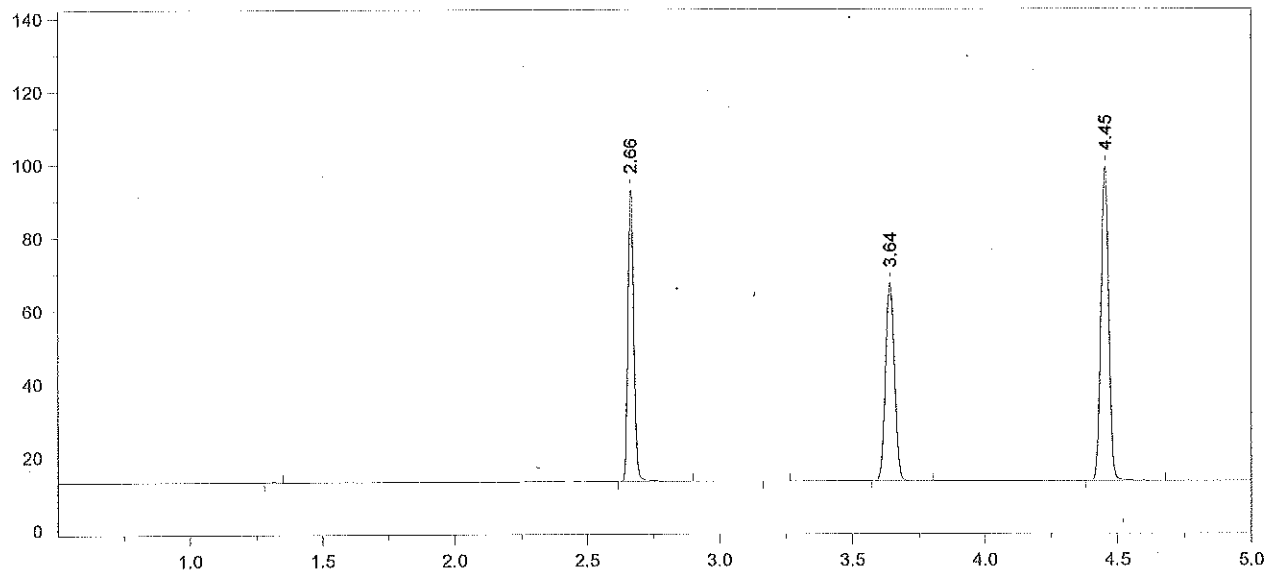
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	128338	0.1241	0.1013
4	3.64	t-Butanol	130758	0.9692	0.7910
5	4.45	n-Propanol	190080	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:38:11 AM
Bound File Name = SIM05142012.0024.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 10:07:58 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

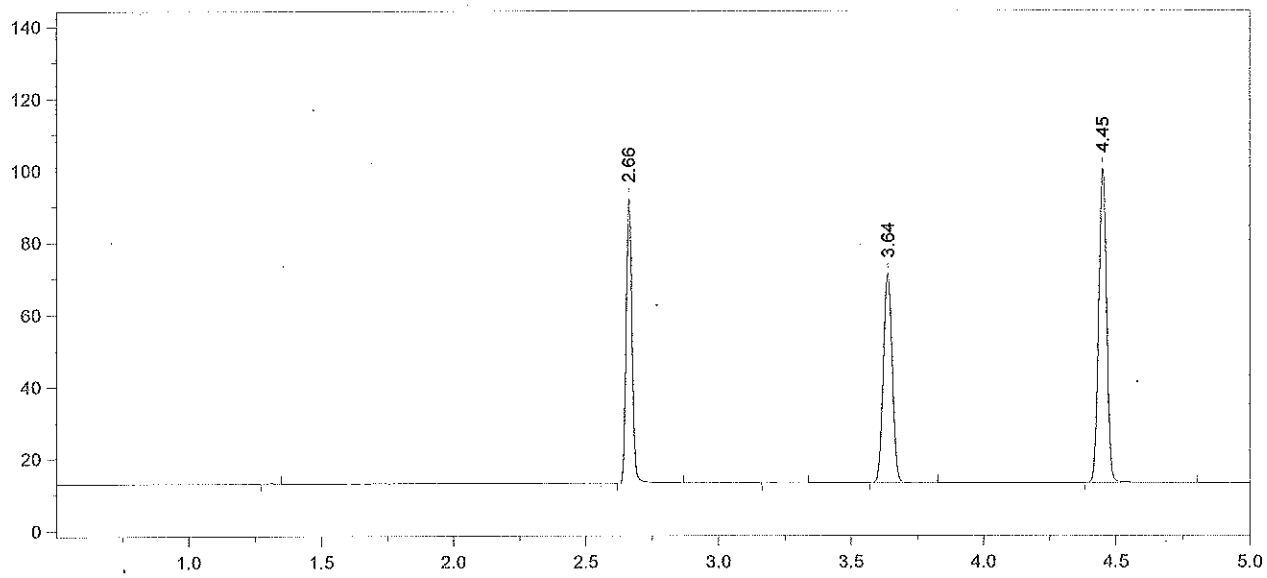
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	119378	0.1192	0.0973
4	3.64	t-Butanol	133250	1.0200	0.8325
5	4.45	n-Propanol	184045	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:38:21 AM
Bound File Name = SIM05142012.0025.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 10:21:42 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

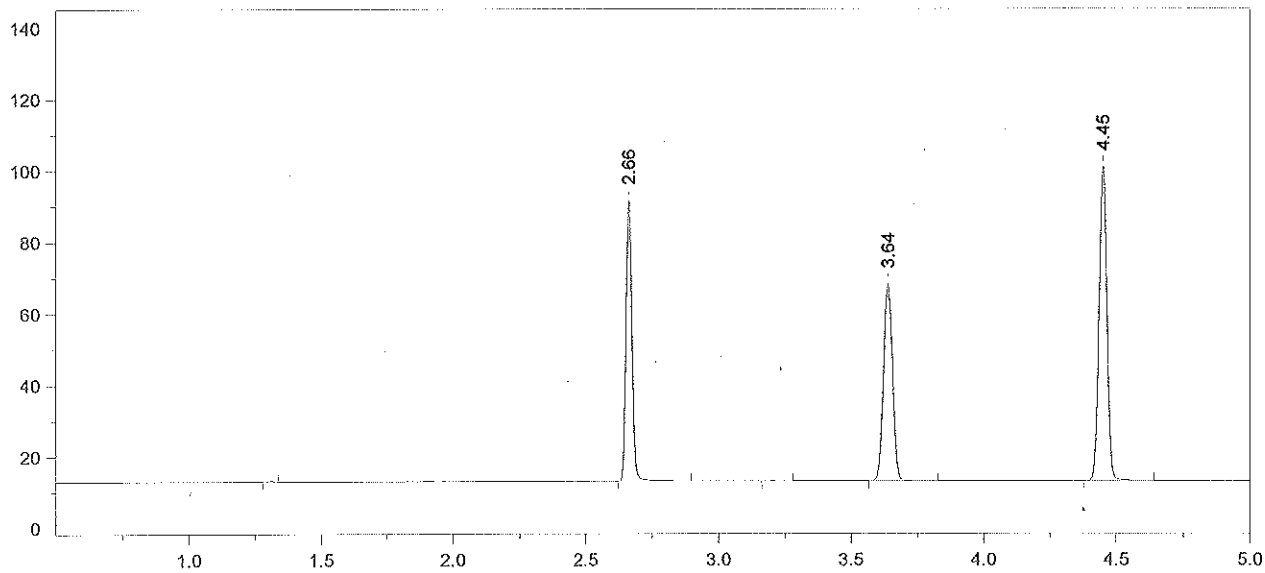
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	123714	0.1242	0.1014
4	3.64	t-Butanol	125321	0.9643	0.7871
5	4.45	n-Propanol	183086	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012 Today's Time = 7:38:31 AM
Bound File Name = SIM05142012.0026.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 10:39:21 PM VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal Calibration Version = 2

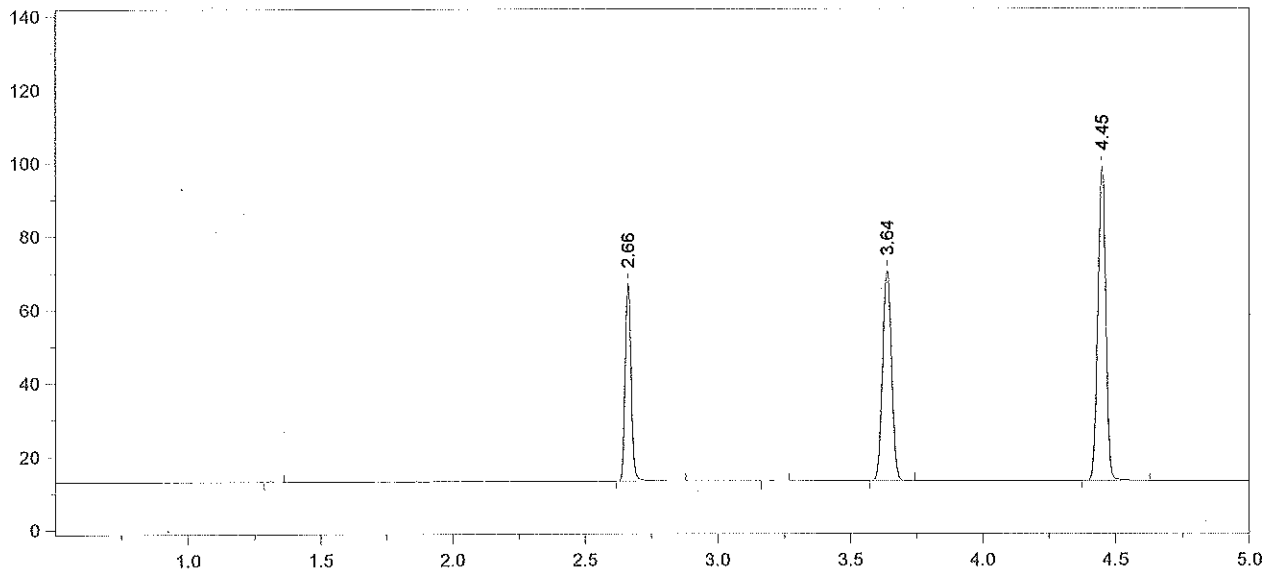
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	121301	0.1200	0.0980
4	3.64	t-Butanol	133964	1.0160	0.8293
5	4.45	n-Propanol	185761	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:38:41 AM
Bound File Name = SIM05142012.0027.RAW
Sample Name = 0.10 Ext Std ALB
Date Taken = 5/14/2012 10:52:37 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

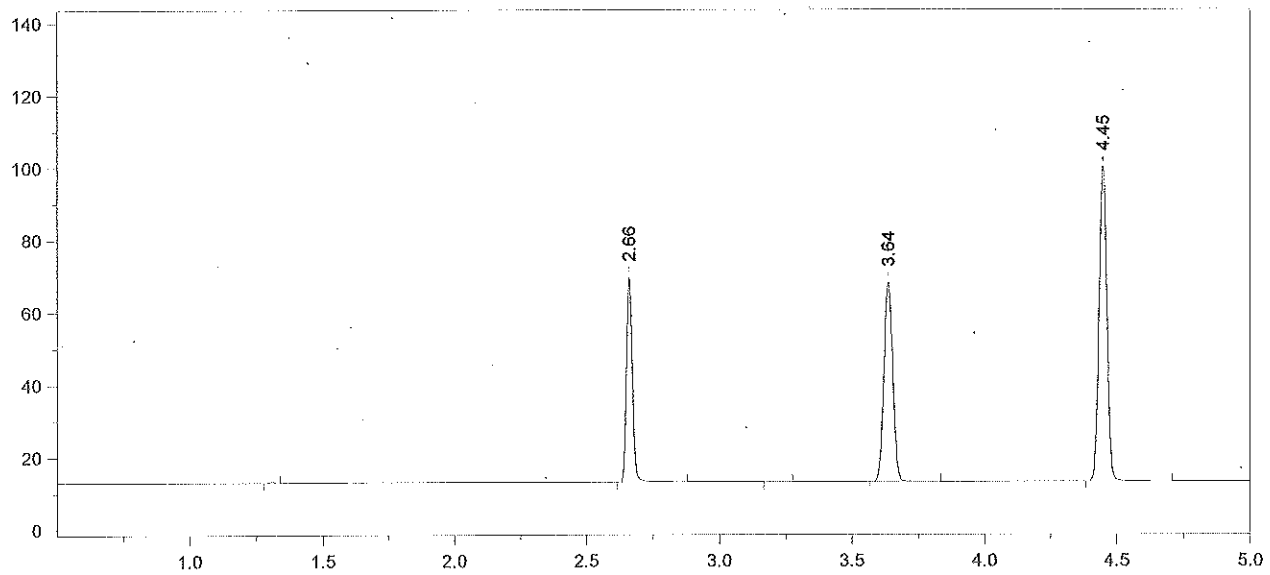
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	121026	0.1202	0.0981
4	3.64	t-Butanol	127631	0.9715	0.7930
5	4.45	n-Propanol	185083	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:38:51 AM
Bound File Name = SIM05142012.0028.RAW
Sample Name = CCS
Date Taken = 5/14/2012 11:10:46 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	83943	0.0848	0.0692
4	3.64	t-Butanol	132158	1.0232	0.8351
5	4.45	n-Propanol	181975	1.0000	0.8162



Format File Name = simsoln-JFH.met.FMT

Today's Date = 5/15/2012
Today's Time = 7:39:01 AM
Bound File Name = SIM05142012.0029.RAW
Sample Name = CCS
Date Taken = 5/14/2012 11:24:34 PM
VDH Headspace Alcohol
Method file = simsoln.met
Calibration file = SimCal 05142012.cal
Calibration Version = 2

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL	Headspace Conversion
2	2.66	Ethanol	87548	0.0869	0.0709
4	3.64	t-Butanol	127231	0.9677	0.7899
5	4.45	n-Propanol	185224	1.0000	0.8162