

FILE

ENG.

DATE

SHEET

ANALYSIS FORM

Epichlorohydrin Sampling Rate
2.4 ppm
+ Benzene Reference 2.9 ppm

	A	B	C STD	D AREA	E mg	F	G	H	I	J	K	L	M
	BLANK						SAMPLE AREA	mg	CONCENTRATION	EXPOSURE			
1	A1-AD						23950	0.1117	9.5328	315		37.20	
2													
3	A2-AD						21540	0.1005	9.4931	315		33.61	
4													
5	A3-AD						22350	0.1044	9.4575	315		35.04	
6													
7	B1-AD						24420	0.1139	9.5328	315		37.93	
8													
9	B2-AD						24490	0.1142	9.4924	315		38.19	
10													
11	B3-AD						22750	0.1061	9.4518	315		35.64	
12													
13	A1-AD						81393	0.1137	9.4796	315		38.08	
14													
15	A2-AD						78053	0.1079	9.4392	315		36.29	
16													
17	A3-AD						77513	0.1082	9.4009	315		36.54	
18													
19	B1-AD						85973	0.1204	9.4796	315		40.22	
20													
21	B2-AD						86213	0.1204	9.4389	315		40.50	
22													
23	B3-AD						82533	0.1153	9.3942	315		38.96	
24													
25	STANDARDS # 1			506200	2.35								
26													
27	2			509100	2.35			$\bar{x}$	=	36.26			
28								SD	=	1.79			
29	3			511500	2.35			C/V	=	4.97%			
30													
31	# 1			124673	1.7372								
32								$\bar{x}$	=	38.43			
33	2			1233673	1.7372			SD	=	1.77			
34								C/V	=	4.11%			
35	3			1290673	1.7372								
36													
37	CS ₂	1327											
38													
39													
40													
41													
42													
43													
44													
45													

CONFIDENTIAL MATERIAL SUBJECT
TO PROTECTIVE ORDER

3M 108977

31.14

EXTINCTION METHOD WORKSHEET

This method of calibrating the 3M Brand Organic Vapor Monitor No. 3500, 3502 depends on adding a known mass of solvent or solvent mixture to a known volume of air.

The known amount of solvent is determined by the change in weight of a syringe upon solvent injection. The known volume of air comes from readings from a positive displacement flowmeter.

The solvent(s) are diffused through one of five aluminum columns. The small bore column is #1 and increasing bore sizes are numbers 2 through 5.

<u>Position</u>	<u>Monitor</u>	<u>Mcg. found</u>	<u>Diffuser Used</u>
1	A1-A00221	B1-A00258	Date of Test
2			Solvent(s) <u>ECH + Benzene</u>
3	A2-A00252	B2-A06289	Temperature
4			Syringe Used
5	A3-A06273	B3-A06288	Mean:
6			Standard Deviation:
Blank			Coefficient of Variation:

<u>Entry</u>	<u>Time</u>	<u>Flowmeter (ft³)(l)</u>	<u>Syringe (gr)</u>	<u>Comments</u>
1	9:25	4863.07	24.76081	ECH
2	1:40	4958.47	24.73394	
3				
4				
5			24.75940	Benzene
6			24.73268	
7				
	3:15	2818.74 l		

CALCULATIONS:

FLOW RATE: 8.948 l/min

MILLIGRAMS OF SOLVENT: 26.87 ECH
26.72 Benzene

(METER)³ OF AIR: 2.8187

3M 108978

CONCENTRATION: 9.53276 ECH
9.47955 Benzene

PPM: 2.436 ECH
2.8698 Benzene

EXPOSURE TIME: 3:15

PPM-HOURS: 12.79 ECH

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15.066 Benzene

TEMP1 270 80 80
 TIME1 0.50
 RATE 10.00
 TEMP2 270 115
 TIME2 2.00
 INJ TEMP 350 200 200
 FID TEMP 350 250 250
 AUX TEMP 400 115 115

CHT SPD 0.30
 ZERO 10.0
 ATTN 21 9
 FID SGNL A
 SLP SENS 0.10
 AREA REJ 100
 FLOW A 30.0 26.0
 FLOW B 20.0 17.7

DELETE CHANGE RUN @
 CHANGE RUN 0 @
 CHANGE RUN 1 0 STOP

START ~~0.20~~ 0.366
 1.15

HP RUN # 1 AUG/31/79 TIME 09:30:47
 BOTTLE 1
 AREA %

RT	AREA	AREA %
0.28	392	0.416
0.36	11640	12.344
0.46	80940	85.833
1.15	1327	1.407

DIL. FACTOR: 1.0000 E+ 0
 0.00 0.00

START ~~0.20~~ 0.366 1.15
 2.75 3.57

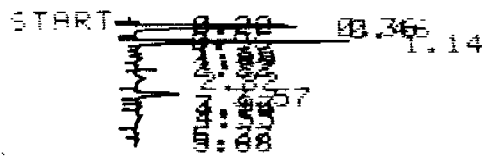
HP RUN # 2 AUG/31/79 TIME 09:43:20
 BOTTLE 2
 AREA %

RT	AREA	AREA %
0.28	416	0.023
0.37	11040	0.598
0.46	80440	4.357
1.15	1248000	67.590
2.75	332	0.018
3.57	506200	27.415

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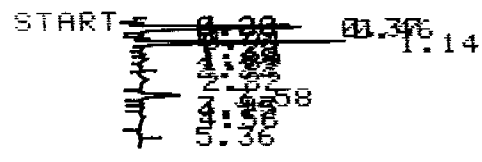
DIL. FACTOR: 1.0000 E+ 0



HP RUN # 3 AUG/31/79 TIME 09:55:55
 BOTTLE 3
 AREA %

RT	AREA	AREA %
0.22	833	0.344
0.28	776	0.320
0.36	12340	5.089
0.46	84040	34.659
0.96	1356	0.559
1.14	82720	34.115
1.37	3342	1.378
1.68	3920	1.617
1.89	4271	1.761
2.22	909	0.375
2.82	7790	3.213
3.57	23950	9.877
3.93	2568	1.059
4.14	3485	1.437
4.55	7612	3.139
5.37	1296	0.534
5.68	1269	0.523

DIL FACTOR: 1.0000 E+ 0



HP RUN # 4 AUG/31/79 TIME 10:08:29
 BOTTLE 4
 AREA %

RT	AREA	AREA %
0.22	838	0.360
0.28	770	0.331
0.37	12310	5.290
0.46	81760	35.136
0.77	3452	1.483
0.94	4277	1.838
1.14	79380	34.113
1.38	3261	1.401
1.68	3723	1.600
1.89	4919	2.114
2.22	759	0.326
2.82	6626	2.847
3.58	21540	9.257
3.93	1513	0.650
4.15	2010	0.864
4.56	5315	2.284
5.36	244	0.105

DIL FACTOR: 1.0000 E+ 0

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START ~~0.28~~ ~~0.376~~ 1.15
~~2.76~~ 3.57

680

HP RUN # 5 AUG/31/79 TIME 10:21:04
 BOTTLE 5
 AREA %

RT	AREA	AREA %
0.28	484	0.026
0.37	11750	0.640
0.46	79880	4.349
1.15	1235000	67.246
2.76	339	0.018
3.57	509100	27.720

DIL FACTOR: 1.0000 E+ 0

START ~~0.28~~ ~~0.376~~ 1.14
~~2.76~~ 3.57

HP RUN # 6 AUG/31/79 TIME 10:33:39
 BOTTLE 6
 AREA %

RT	AREA	AREA %
0.22	863	0.367
0.28	773	0.329
0.37	12000	5.105
0.46	82260	34.994
0.78	4171	1.774
0.96	1389	0.591
1.14	78840	33.539
1.38	3438	1.463
1.68	3599	1.531
1.89	3949	1.680
2.22	890	0.379
2.82	6592	2.804
3.57	22390	9.525
3.92	2246	0.955
4.13	2891	1.230
4.55	6344	2.699
5.39	1150	0.489
5.68	1284	0.546

DIL FACTOR: 1.0000 E+ 0

START ~~0.28~~ ~~0.376~~ 1.14
~~2.76~~ 3.57

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3M 108981

HP RUN # 7 AUG/31/79 TIME 10:46:13
 BOTTLE 7
 AREA %

RT	AREA	AREA %
0.22	892	0.356
0.28	790	0.316
0.37	12150	4.855
0.46	82120	32.813
0.74	3364	1.344
0.96	1529	0.611
1.14	87300	34.883
1.37	3598	1.438
1.69	4270	1.706
1.89	4677	1.869
2.23	836	0.334
2.82	8894	3.554
3.58	24420	9.758
3.93	2371	0.947
4.14	3173	1.268
4.55	7266	2.903
5.39	1138	0.455
5.67	1481	0.592

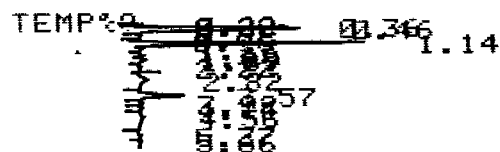
DIL FACTOR: 1.0000 E+ 0



HP RUN # 8 AUG/31/79 TIME 10:58:47
BOTTLE 8
AREA %

RT	AREA	AREA %
0.28	487	0.026
0.37	11260	0.594
0.46	80520	4.247
1.15	1292000	68.139
2.75	362	0.019
3.57	511500	26.976

DIL FACTOR: 1.0000 E+ 0



HP RUN # 9 AUG/31/79 TIME 11:07:53
BOTTLE 9
AREA %

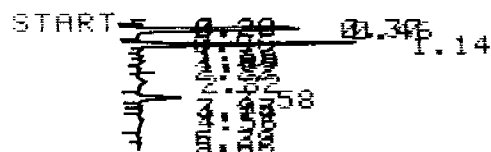
RT	AREA	AREA %
0.22	914	0.369
0.28	818	0.331
0.36	11810	4.772
0.46	82900	33.495
0.76	4242	1.714
0.96	1314	0.531
1.14	87540	35.369
1.37	3821	1.544
1.68	4352	1.758

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1.83	4841	1.950
2.22	946	0.382
2.82	7830	3.164
3.57	24490	9.895
3.92	1758	0.710
4.14	2216	0.895
4.56	5972	2.413
5.37	960	0.388
5.66	779	0.315

DIL FACTOR: 1.0000 E+ 0



HP RUN # 10
BOTTLE 10
AREA %

AUG/31/79

TIME 11:20:28

RT	AREA	AREA %
0.22	843	0.358
0.28	768	0.326
0.37	11850	5.037
0.46	83860	35.645
0.96	1352	0.575
1.14	83860	35.645
1.37	3018	1.283
1.68	3700	1.573
1.89	3922	1.667
2.22	775	0.329
2.82	6820	2.899
3.58	22750	9.670
3.93	1717	0.730
4.14	2253	0.958
4.56	5812	2.470
5.39	941	0.400
5.66	1024	0.435

DIL FACTOR: 1.0000 E+ 0

TEMP1 1 1 5 @
RATE 0 @

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3M 108983