

1,1,1-Trichloroethane Validation					1995						lce3.xls			
The exposure level (1 EL) is 350 ppm.														
Using our published sampling rate of 30.9 +/- .3 cc/min, an 8 hr exposure at														
1 EL = 28.3 mg, 0.5 EL = 14.2 mg and 0.1 EL = 2.83 mg.														
Desorption Efficiency														
1 1/2 mL CS2 used for desorption.					GC/FID 30Mx.25mmx.25um DB5.									
Spike	mg	recovery	ave rec	std dev	Recovery									
28.1	27.769	0.988	0.988	0.003	1.00									
28.1	27.858	0.991												
28.1	27.737	0.987												
28.1	27.684	0.985												
13.38	13.250	0.990	0.988	0.009										
13.38	13.205	0.987												
13.38	13.070	0.977												
13.38	13.357	0.998												
2.676	2.762	1.032	1.027	0.008										
2.676	2.740	1.024												
2.676	2.772	1.036												
2.676	2.723	1.018												
Storage														
Spike w 13.38 mg (0.5 EL) plus 40 uL H2O stored at RT and 4 C.														
mg					Recovery									
initial	2wks RT	2wks cold	3wks RT	3wks cold	initial	2wks RT	2wks cold	3wks RT	3wks cold					
13.637	12.614	13.046	13.474	13.948	1.02	0.94	0.98	1.01	1.04					
13.566	12.588	13.238	13.378	13.437	1.01	0.94	0.99	1.00	1.00					
13.429	13.105	13.241	13.459	13.618	1.00	0.98	0.99	1.01	1.02					
13.767	12.906	13.145	13.399	13.464	1.03	0.96	0.98	1.00	1.01					
				average	1.02	0.96	0.98	1.00	1.02					
				std dev	0.01	0.02	0.01	0.00	0.02					
				cv	1.04	1.93	0.70	0.34	1.72					

Humidity Effect on Uptake Linearity												
Exposure to 367 ppm @ 50%RH (3520 in G, 3500 in K)												
time min	mg A	mg B	A corr	B corr	mg tot	3520 SR	Ave SR	AVE MG	std dev sr	3500 SR	ave sr	stdev sr
110	7.041	0	6.835922	0	6.835922	31.03336	31.43592	6.924595	0.374441	31.03336	31.43592	0.374441
110	7.209	0	6.999029	0	6.999029	31.77383				31.77383		
110	7.147	0	6.938835	0	6.938835	31.50056				31.50056		
235	15.24	0	14.79612	0	14.79612	31.44158	31.13349	14.65113	0.267323	31.44158	31.13349	0.267323
235	15.008	0	14.57087	0	14.57087	30.96294				30.96294		
235	15.024	0	14.58641	0	14.58641	30.99595				30.99595		
351	22.046	0.007	21.40388	0.006796	21.41883	30.47285	29.84447	20.97715	0.54421	30.45158	29.81205	0.553871
351	21.348	0.013	20.72621	0.012621	20.75398	29.52696				29.48745		
351	21.355	0.012	20.73301	0.01165	20.75864	29.53359				29.49712		
470	29.003	0.045	28.15825	0.043689	28.25437	30.0201	29.30503	27.58136	0.738922	29.91798	29.19761	0.74711
470	27.557	0.052	26.75437	0.050485	26.86544	28.54437				28.42636		
470	28.354	0.045	27.52816	0.043689	27.62427	29.35063				29.2485		
					ave SR	30.42973				30.39477		
					std dev	1.02039				1.060039		
					cv	3.353268				3.487571		

Exposure to 369 ppm @ 80%RH												
time min	mg A	mg B	A corr	B corr	mg tot	3520 SR	Ave SR	ave mg	stdev sr	3500 SR	ave sr	stdev sr
115	7.006	0	6.801942	0	6.801942	29.37644	29.7622	6.891262	1.256996	29.53653	29.92439	1.263846
115	7.433	0	7.216505	0	7.216505	31.16687				31.33672		
115	6.855	0	6.65534	0	6.65534	28.74329				28.89993		
230	13.822	0.122	13.41942	0.118447	13.68	29.54081	27.73361	12.84311	1.834187	29.13602	27.65132	1.609792
230	13.225	0.013	12.83981	0.012621	12.86757	27.78644				27.87758		
230	12.306	0.016	11.94757	0.015534	11.98175	25.87358				25.94038		
333	18.811	0.344	18.26311	0.333981	18.99786	28.33509	27.99027	18.76667	1.182293	27.38765	26.97902	1.06648
333	19.081	0.418	18.52524	0.405825	19.41806	28.96181				27.78076		
333	17.699	0.328	17.1835	0.318447	17.88408	26.67389				25.76865		
469	23.765	1.391	23.07282	1.350485	26.04388	27.58017	27.26152	25.74298	0.312156	24.567	24.23069	0.448557
469	22.947	1.616	22.27864	1.568932	25.73029	27.24808				23.7214		
469	23.607	1.187	22.91942	1.152427	25.45476	26.9563				24.40367		
					Ave SR	28.1869			27.19636	28.18491		
					std dev	1.465519			2.345778	1.765867		
					CV	5.199292			8.625339	6.26529		
									w 8 hr	w/o 8hr		
			3M 3500	3M 3520	3M 3500							
Mean of 50% & 80%RH SRs			29.4	29.60071	28.8	Non-linear difference >5%						
Std Dev			1.76666	1.684456	2.41615							
CV			5.999315	5.690593	8.390701		8hr 80%	10.90465				
Bias			-4.70004	-4.20482	-6.81048							
OSHA Accuracy			16.69867	15.586	23.59188							
			w/o n-l pt	all pts	all pts							

Reverse Diffusion							
30 min @694 ppm @80%RH (A)+ 7 1/2 hrs @ 0 ppm(B)							
mg A		mg B		SR A	SR B	ave sr	
3.518		3.243		30.96746	28.54675		
3.827		3.497		33.68746	30.78261		
3.528		3.325		31.05549	29.26856		
3.421		3.444		30.11361	30.31607		
3.385		3.407		29.79672	29.99037		
3.774		3.528		33.22092	31.05549		
average	3.5755		3.407333				
stddev	0.183509		0.107452				
cv	5.132397		3.153542				
%diff			4.703305				
ave sr				31.47361	29.99331	30.73346	
Concentration-Time							
Expose 480 min @37.8 ppm (.1EL) @ 50%RH							
mg	mg corr	SR	ave SR	std dev	cv	bias	acc
3.209	3.209	32.41359	31.00284	0.74748	2.411006	0.33282	5.154831
3.022	3.022	30.52473					
3.085	3.085	31.16109					
3.028	3.028	30.58534					
3.063	3.063	30.93887					
3.009	3.009	30.39342					
Expose 17 min @36.7 ppm (.1EL) @ 50%RH							
mg	mg corr	SR	ave SR	std dev	cv	bias	acc
0.115	0.115	33.78106	32.89982	1.050946	3.194383	6.471908	12.86067
0.114	0.114	33.48732					
0.113	0.113	33.19357					
0.108	0.108	31.72483					
0.107	0.107	31.43108					
0.115	0.115	33.78106					

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Temperature Effects												
120 min exposures												
temp	ppm	mg	ave mg	% diff								
RT	238	5.508	5.4625									
		5.442										
		5.394										
		5.14										
		5.372										
		5.919										
42 C	237	5.448	5.393333	-1.26621								
		4.98										
		4.957										
		5.772										
		5.435										
		5.768										
12 C	239	5.734	5.887	7.771167								
		5.92										
		5.821										
		5.884										
		5.915										
		6.048										

Face Vel city-Orientation						
1,1,1-Trichloroethane Face Velocity and Orientation Test (June-July, 1994)						
Using data from 14-400fpm						
Excludes 3 and 10 fpm						
Mean	2.152359					
Std dev	0.172512					
Coef Var	8.015002					
Amt expec	2.225573					
Bias	-3.28969					
Acc	19.31969					
Data Normalized to 120 min at 110 ppm						
mg	mg corr	av par/per	stdev	ave	stdev	fpm
2.15369	2.194	2.212	0.088988	2.226	0.105537	28
2.09523	2.134					
2.26707	2.309					
2.14874	2.189	2.24	0.139162			
2.35343	2.397					
2.0943	2.133					
2.11722	2.025	2.131	0.128851	2.113	0.144662	24
2.1887	2.094					
2.37792	2.275					
2.02467	1.937	2.095	0.186392			
2.1412	2.048					
2.40501	2.3					
2.37608	2.273	2.248	0.186401	2.177	0.201666	19
2.53035	2.42					
2.14325	2.05					
1.94741	1.863	2.105	0.227411			
2.41886	2.314					
2.23674	2.139					
1.96915	2.111	2.149	0.033216	2.161	0.092121	14
2.01674	2.162					

2.02731	2.174											
2.17388	2.331	2.172	0.140364									
1.92434	2.063											
1.98042	2.123											
1.95793	2.051	2.023	0.035564	1.996	0.095571	10						
1.89261	1.983											
1.94131	2.034											
1.79496	1.88	1.97	0.139715									
1.81283	1.899											
2.03437	2.131											
1.99337	2.088	1.922	0.153921	1.887	0.109311	60 small						
1.70338	1.784											
1.80727	1.893											
1.72088	1.803	1.851	0.048983									
1.81436	1.901											
1.76545	1.85											
2.76105	2.296	2.429	0.145965	2.429	0.145965	399 alum						
2.8937	2.407											
2.7101	2.254											
3.18293	2.647											
2.9372	2.443											
3.04077	2.529											
3.00425	2.132			2.227	0.10792	221 alum						
2.9362	2.084											
3.33468	2.367											
3.15633	2.24											
3.12722	2.219											
3.27171	2.322											
3.37871	2.148			2.124	0.110493	105 alum						
3.53563	2.248											
3.05727	1.944											
3.34085	2.124											
3.48948	2.219											
3.24541	2.064											
3.86996	2.289			2.169	0.135254	302 alum						
3.48862	2.063											
3.54756	2.098											

3.42883	2.028											
3.66405	2.167											
4.00981	2.371											
2.16591	2.072			2.148	0.121642	94	mod sm					
2.38476	2.281											
2.17588	2.081											
2.17778	2.083											
2.43134	2.326											
2.13983	2.047											
1.71664	2.118			2.063	0.148642	25	mod sm					
1.4895	1.838											
1.79993	2.22											
1.60569	1.981											
1.79323	2.212											
1.62921	2.01											
2.5669	1.822			2.032	0.173278	17	mod sm					
2.9666	2.105											
2.63741	1.872											
3.03423	2.153											
2.77427	1.969											
3.19705	2.269											
3.02999	1.938	1.779	0.162814	1.723	0.134696	3	fan died					
2.52125	1.612											
2.79362	1.787											
2.43123	1.555	1.667	0.097136									
2.70077	1.727											
2.68732	1.719											
3.26038	2.085	1.885	0.184616	1.854	0.17125	3						
2.69148	1.721											
2.89072	1.849											
3.0294	1.937	1.823	0.190681									
3.01627	1.929											
2.50654	1.603											
3.55451	2.08	2.202	0.129792	2.224	0.087839	340	w fan					
3.99627	2.338											
3.73995	2.188											
3.89665	2.28	2.246	0.031215									



Sheet1

3.82977	2.241											
3.79121	2.218											

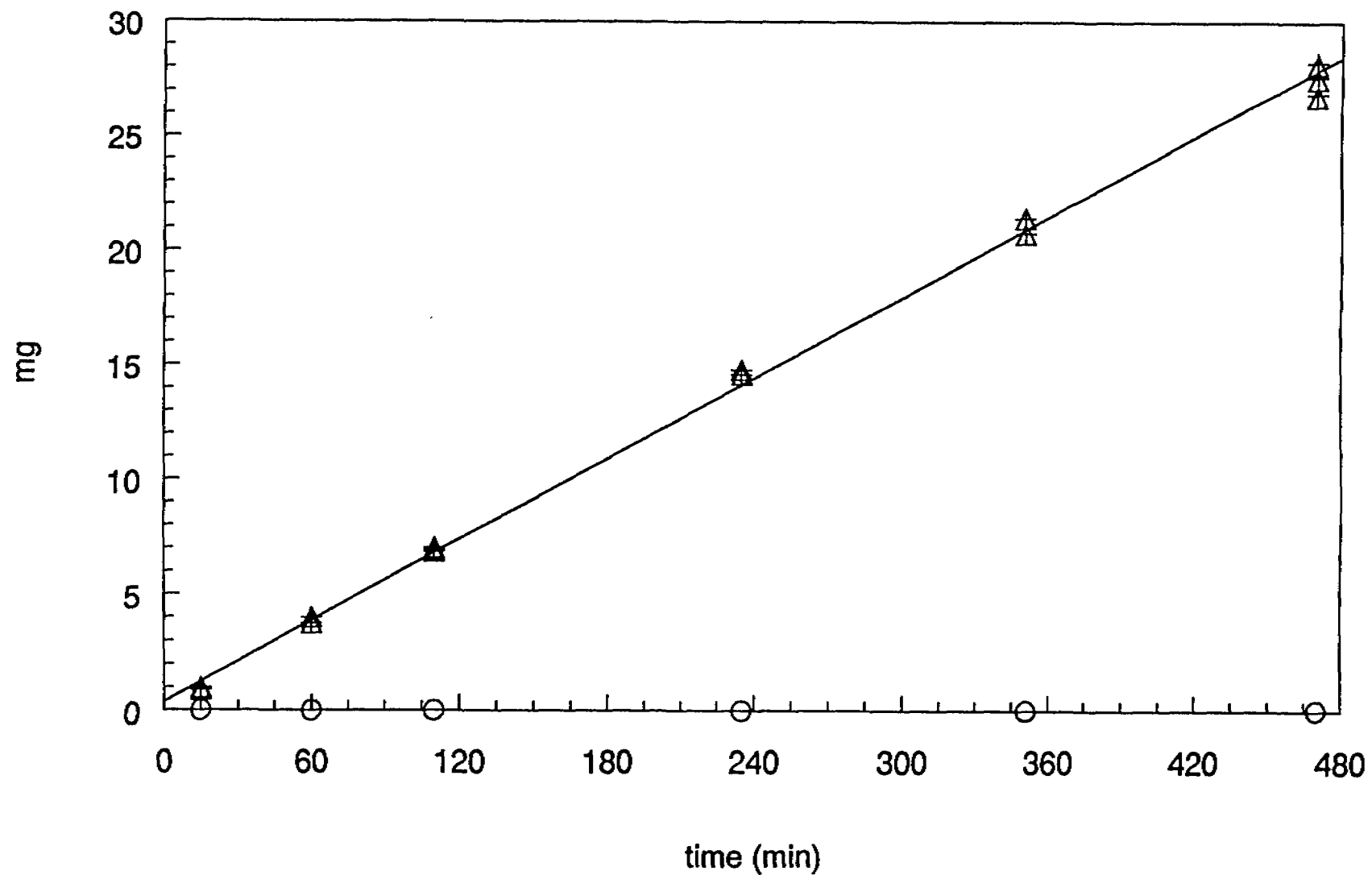
1,1,1-Trichloroethane

367 ppm • 50%RH

+ total

△ primary

○ secondary



3M 110516

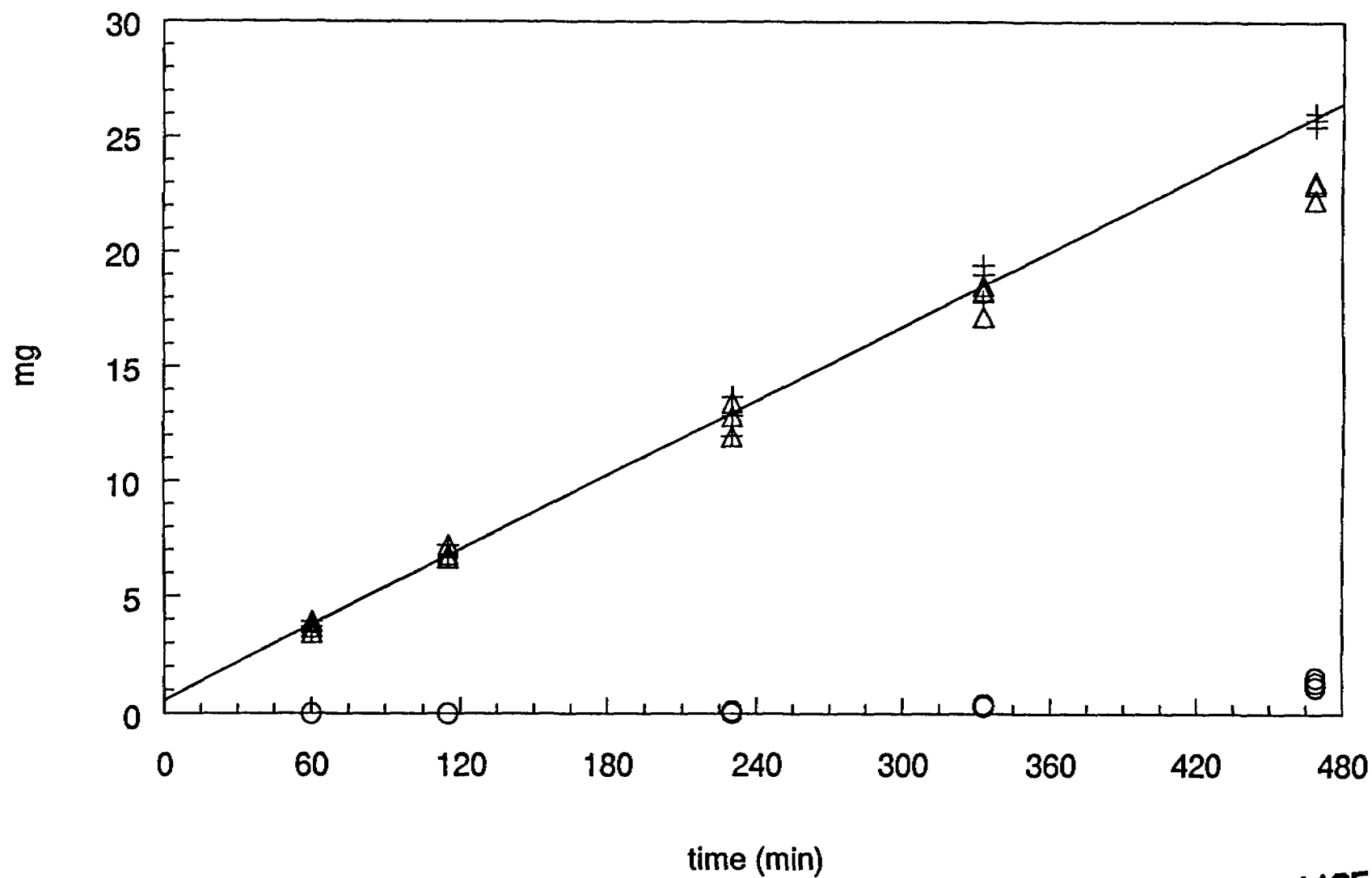
1,1,1-Trichloroethane

369 ppm • 80%RH

+ total

△ primary

○ secondary



3M 110517

Face Velocity

1,1,1-Trichloroethane 110 ppm 2 hrs

