

PLAINTIFF'S EXHIBIT

MON-2321

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MAP 005050

LAM000876

Monsanto

Don L. Meade - Chocolate Bayou Plant - Ext. 5847

DATE January 26, 1979
SUBJECT Chocolate Bayou Plant-
Industrial Hygiene
REFERENCE Baseline Exposure Survey
TO : See Attached Distribution

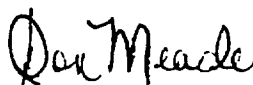
Attached in summary form are the results of the Chocolate Bayou Industrial Hygiene Baseline Exposure Survey.

The intent of the Baseline Survey was to identify on an across-the-plant basis exposure situations for all materials of concern so that controls for exposures can be implemented on a priority basis.

This summary represents a compilation of data taken in 1976, 1977 and 1978 and includes approximately 7600 actual analytical measurements.

From this survey, routine, sustaining monitoring and corrective action programs can be established. Based on an analysis of the results of this survey, requirements for Chocolate Bayou's 1979 Routine Monitoring Program have been defined and are included here in Appendix I.

Corrective actions (both engineering and respiratory controls) have been implemented in all areas of significant exposures. Meetings with Department Superintendents to discuss in detail this information will be scheduled in February.


Don L. Meade

DLM/bg
Attachments

MAP 005051

LAM000877

CHOCOLATE MAYOU INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT= AN	SAMPLING HISTORY	REL	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
ACETONE	PERS TWA PERS STEL AHEA TWA AHEA STEL	1000	21 6 18 26	2.68 46.09 27.48 43.00	.01 .29 .04 .10	.30 9.39 1.95 6.52
ACETONITRILE	PERS TWA PERS STEL AHEA TWA AHEA STEL	40 60	85 6 18 20	3.79 3.11 26.00 11.44	.01 .01 .01 .05	.12 .76 1.52 2.12
ACROLEIN	PERS TWA PERS STEL AHEA TWA AHEA STEL	0.1 0.3	87 5 18 22	.52 .45 1.30 16.72	.01 .10 .01 .01	.06 .20 .11 1.48
ACRYLONITRILE	PERS TWA PERS STEL AHEA TWA AHEA STEL	2 10	132 8 18 30	7.45 62.40 5.90 273.00	.01 .11 .01 .01	.60 24.55 .16 23.11
AMMONIA	AHEA STEL	25	2	2.30	1.00	1.65
ASBESTOS	PERS STEL AHEA TWA	2	1 5	.00 .17	.00 .00	.00 .06
BENZENE	AHEA TWA	10	1	.02	.02	.02
NO	PERS STEL AHEA STEL	2**	2 5	3.00 5.40	2.17 2.00	2.54 3.84
HYDROGEN CYANIDE (HCN)	AHEA STEL	10*	5	1.10	.50	.62
IRON OXIDE (FUME)	AHEA OTHER	5	5	3.06	.34	.97
NO	PERS STEL AHEA STEL	5**	1 2	7.29 4.44	7.29 1.00	7.29 2.92

* Same as for AN (below).

* Same as for AN (below).

* Engineering controls being implemented on CEA's 3397 and 3453.
 * Sample boxes installed.
 * Respiratory protection procedures implemented.

* Mechanical loading system being designed on CEA 3397.
 * Respiratory protection procedures implemented.

* Catalyst dust fumes when working inside clean reactor.

* Same as for HCN (above.)

MAP 005052

LEGEND

* - AS PERSONNEL TWA

** - AS DUST

*** - MONSANTO STANDARD

I.D. - INITIAL DETERMINATION (NO EXPOSURE)

CHOCULATE HAYOU INDUSTRIAL HYGIENE SUMMARY

DEPT= A N

SAMPLING HISTORY

RESULTS

CORRECTIVE / COMMENTS ACTION

LAM000879

SUBSTANCE	NO OF SAMPLES	HI	LU	AVERAGE
Acetaldehyde	90	76.00	66.00	72.13
Methanol	100	I.D.		
Propionitrile	200	I.D.		
Sodium Hydroxide		I.D.		
Sulfuric Acid	2**	I.D.		
Acetic Acid	1**	I.D.		
Catalyst 41	10	I.D.		
	10**	I.D.		

*Only a problem when dumping catalyst from bottom of reactor; respiratory protection is required.

LEGEND

- AS PERSONNEL TWA

** - AS DUST

*** - MONSANTO STANDARD

I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005053

CHOCOLATE BAYOU INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT= CONT LAB	SAMPLING HISTORY	REL	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
A-METHYL STYRENE	PERS TWA	100	0	.02	.01	.01
	PERS TWA	1000	17	13.19	.02	4.01
	PERS STEL	1250	1	1.16	1.16	1.16
	PERS OTHER		1	.01	.01	.01
ACETONITRILE	AREA OTHER		1	1.17	1.17	1.17
	PERS TWA	40	17	.45	.01	.11
	PERS STEL	60	1	.09	.04	.09
	PERS OTHER		1	.03	.03	.03
ACETOPHENONE	AREA OTHER		1	.01	.01	.01
	PERS TWA	25***	0	.01	.01	.01
	PERS TWA	0.1	17	.37	.01	.07
	PERS STEL	0.3	1	.04	.04	.04
ACRYLONITRILE	PERS OTHER		1	7.82	7.82	7.82
	AREA OTHER		1	.03	.03	.03
	PERS TWA	2	17	1.24	.01	.33
	PERS STEL	10	1	.06	.06	.06
BENZENE	PERS OTHER		1	.05	.05	.05
	AREA OTHER		1	.02	.02	.02
	PERS TWA	10	14	.27	.05	.13
	PERS TWA	50	6	.07	.01	.04
CUMENE	PERS TWA	100	6	.02	.01	.01
	PERS TWA	10	6	.05	.01	.02
	AREA STEL	5*	6	.01	.01	.01
	PERS TWA	5***	6	.08	.01	.03
ETHYL BENZENE	PERS TWA	100	6	.21	.03	.10
	PERS TWA	100	6	.36	.01	.10
NAPHTHALENE	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
PHENOL	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
STYRENE	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
TOLUENE	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
XYLENE	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			
	PERS TWA	100	6			

* Same as AN (see below).

* Sample dumping facilities have been upgraded to reduce AN exposure.

LEGEND

- * - AS PERSONNEL TWA
- ** - AS DUST
- *** - MONSANTO STANDARD
- I.D. - INITIAL DETERMINATION (NO EXPOSURE)

CHOCOLATE BATON INDUSTRIAL HYGIENE SUMMARY

DEPT= DUST

SAMPLING HISTORY

REL

RESULTS

SUBSTANCE
A METHYL STYRENE

NO OF SAMPLES HI LO AVERAGE

PERS TWA
AREA TWA
AREA STEL
AREA OTHER

100
18
1
1
1

.13
.01
.01
.01

.01
.01
.01
.01

.02
.01
.01
.01

ACETONE

PERS TWA
PERS STEL
AREA TWA
AREA STEL
AREA OTHER

1000
34
3
7
5

1.20
1.42
1.05
7.72
.42

.01
.14
.04
.04
.03

.30
.90
.40
2.43
.29

ACETONITRILE

PERS TWA
PERS STEL
AREA TWA
AREA STEL
AREA OTHER

40
60
32
2
7
5
5

.24
.28
.22
9.95
.01

.01
.04
.01
.10
.01

.06
.19
.05
2.22
.01

ACETOPHENONE

PERS TWA
AREA TWA
AREA STEL
PERS OTHER
AREA OTHER

25***
15
5
3
3
1

.01
.01
278.80
129.70
.01

.00
.01
.01
5.85
.01

.01
.01
.01
103.51
52.54
.01

ACROLEIN

PERS TWA
PERS STEL
AREA TWA
AREA STEL
AREA OTHER

0.1
0.3
34
3
7
7
5

.41
6.14
.02
15.09
.12

.01
.01
.01
.03
.01

.06
2.07
.01
3.11
.04

ACRYLONITRILE

PERS TWA
PERS STEL
AREA TWA
AREA STEL
AREA OTHER

2
10
33
4
7
9
5

4.87
24.10
6.15
261.00
5.45

.01
.10
.07
.03
.96

.33
10.35
1.70
71.55
2.84

AMMONIA

AREA STEL

25

53.00

26.00

40.00

ASBESTOS

AREA TWA

5

.05

.02

BENZENE

PERS TWA
PERS STEL
AREA TWA
AREA STEL
AREA OTHER

10
20
30
11
5
21
4
1
0

9.38
157.50
.13
202.30
15.40
5.30
.00

.01
.59
.05
.10
4.64
5.30
.00

.44
24.05
.07
18.44
9.23
5.30
.00

LEGEND

- AS PERSONNEL TWA

- AS DUST

- MONSANTO STANDARD

I.D. - INITIAL DETERMINATION

(NO EXPOSURE)

MAP 005055

LAM000881

Engineering controls being implemented on
CEA 3397 and 3453.
Sample boxes installed.
Respiratory protection procedures have been
implemented.
Samples taken near leaking NH₃ compressor,
normally no exposure.

Engineering controls being implemented on
CE-1103 and CEA 3392.
Respiratory protection procedures implemented.

CHOCULATE MAYO INDUSTRIAL HYGIENE SUMMARY

REPORT DIST	SAMPLING HISTORY	PEL	NO OF SAMPLES	HI	LO	AVERAGE	CORRECTIVE / COMMENTS ACTION
SUBSTANCE CUMENE	PERS TWA	50	22	1.12	.01	.19	
	PERS STEL	75	3	.50	.10	.23	
	AMEA TWA		5	.19	.07	.14	
	AMEA STEL		3	.60	.01	.22	
ETHYL BENZENE	AMEA OTHER		1	.17	.17	.17	Exposures may occur during tank truck unloading/sampling. Respiratory & engineering controls to be implemented.
	PERS TWA	100	22	.16	.01	.02	
	PERS STEL	125	1	3.60	3.60	3.60	
	AMEA TWA		5	.02	.02	.02	
HYDROGEN CHLORIDE	AMEA STEL		2	.16	.10	.13	
	AMEA OTHER		1	2.69	2.69	2.69	
	AMEA CEL	5*	2	5.74	2.18	3.96	
	AMEA STEL	10*	2	.48	.32	.40	
NAPHTHALENE	PERS TWA	10	15	.10	.01	.03	
	PERS STEL		1	.10	.10	.10	
	AMEA TWA		5	.21	.02	.27	
	AMEA STEL		1	.01	.01	.01	
PHENOL	AMEA OTHER		1	.01	.01	.01	Short-term exposures may occur during tank car loading, 8-hour TWA exposures are estimated 5ppm. Respiratory & eng. controls to be implemented.
	AMEA STEL	5*	13	235.20	.30	25.42	
	PERS TWA	5***	21	.85	.01	.10	
	AMEA TWA		5	.01	.01	.01	
STYRENE	AMEA STEL		1	.01	.01	.01	
	AMEA OTHER		1	.01	.01	.01	
	PERS TWA	100	21	1.93	.01	.19	
	AMEA TWA		5	.03	.01	.03	
TOLUENE	AMEA STEL		4	.24	.01	.16	
	AMEA OTHER		1	.01	.01	.01	
	PERS TWA		15	.05	.01	.02	
	AMEA TWA	100	5	.17	.05	.12	
XYLENE	AMEA STEL		1	.59	.59	.59	
	AMEA OTHER		1	.75	.75	.75	
	PERS TWA	10		I.D.			
	AMEA TWA						
CROTONALDEHYDE	AMEA STEL	2					Isolated potential exposure situations, good protective equipment procedures in effect.
	AMEA OTHER						
	PERS TWA						
	AMEA TWA						
PPAH	AMEA STEL	0.2					< PEL except during sampling of tank car, need to upgrade car sampling facilities.
	AMEA OTHER						
	PERS TWA						
	AMEA TWA						
ACETIC ACID	AMEA STEL	10					Visual Observation-exposures occur during tank truck unloading and sampling. Respiratory and engineering controls to be implemented.
	AMEA OTHER						
	PERS TWA						
	AMEA TWA						

CHOCOLATE HAYCO INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLING HISTORY	REL	NO OF SAMPLES	HI	LO	AVERAGE
A METHYL STYRENE	PERS TWA	100	8	.15	.02	.05
	AREA TWA		12	1.47	.01	.19
	AREA STEL		11	9.43	.01	2.26
ACETONE	AREA OTHER		21	14.92	.01	3.34
	PERS TWA	1000	29	2.58	.01	.35
	AREA TWA		14	2.29	.01	.46
ACETONITRILE	AREA OTHER		19	10.97	.01	2.14
	PERS TWA	40	29	.25	.01	.03
	AREA TWA		18	.70	.01	.15
ACETOPHENONE	AREA OTHER		18	2.63	.01	.44
	PERS TWA	25***	8	.04	.01	.02
	AREA TWA		12	.03	.01	.01
ACROLEIN	AREA STEL		10	28.91	.01	3.06
	AREA OTHER		8	2.15	.01	.48
	PERS TWA	0.1	29	.16	.01	.06
ACRYLONITRILE	AREA TWA	0.3	14	.47	.01	.10
	AREA OTHER		26	261.31	.00	26.02
	PERS TWA	2	29	.50	.01	.06
ASBESTOS	AREA TWA		18	1.33	.01	.21
	AREA OTHER		26	324.00	.00	13.46
	AREA TWA		1	.00	.00	.00
BENZENE	PERS TWA	10	36	10.60	.10	1.53
	AREA TWA		12	19.28	.22	2.70
	AREA STEL		50	1002.92	.02	65.04
CUMENE	AREA OTHER		21	599.35	.32	109.06
	PERS TWA	50	19	10.33	.51	2.94
	AREA TWA		12	28.30	.01	3.52
ETHYL BENZENE	AREA STEL		17	247.40	.10	49.00
	AREA OTHER		21	21.04	.14	2.97
	PERS TWA	100	18	.18	.01	.08
NAPHTHALENE	AREA TWA		12	.46	.01	.06
	AREA STEL		14	13.72	.00	2.19
	AREA OTHER		29	92.62	.01	17.61
	PERS TWA	10	10	.10	.01	.03
	AREA TWA		12	.26	.01	.03
	AREA STEL		9	.78	.01	.10
	AREA OTHER		18	26.57	.01	3.15

*Same as AN (see below).

*Engineering controls being implemented under CEA 3397.

*Respiratory protection procedures in effect.

*Engineering controls being implemented under projects CB-1182, CB-1129, CB-1205, CB-1242.

*Respiratory protection procedures implemented.

*Same as Benzene (see above).

LEGEND

- * - AS PERSONNEL TWA
- ** - AS DUST
- *** - NONSANTO STANDARD
- I.D. - INITIAL DETERMINATION (NO EXPOSURE)

LAM000884

CHOCOLATE MAYOU INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT= ENV CON	SAMPLING HISTORY	PEL	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE OXYLENE	PERS TWA	100	14	5.19	.01	.77
	AREA TWA		12	.34	.01	.05
	AREA STEL		11	57.11	.01	7.54
	AREA OTHER		20	9.14	.01	2.40
STYRENE	PERS TWA	5**	12	12.07	.01	1.09
	AREA TWA		12	.22	.01	.03
	AREA STEL		11	14.17	.03	3.74
	AREA OTHER		21	31.12	.01	4.04
TOLUENE	PERS TWA	100	19	.54	.02	.15
	AREA TWA		12	.78	.01	.12
	AREA STEL		12	32.23	.04	3.04
	AREA OTHER		21	144.40	.04	38.33
NESITYL OXIDE		25		< 10 (Measured with Ethyl Benzene)		
PHENOL	PERS (Biological)	5**	100	Exposures < 1 ppm		

* Same as Benzene (see first page)

MAP 005058

LEGEND	
*	AS PERSONNEL TWA
**	AS DUST
***	NONSANTO STANDARD
I.D.	INITIAL DETERMINATION
(NO EXPOSURE)	

CHOCULATE HAYOU INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLING MISJURY	REL	NO OF SAMPLES	HI	LO	AVERAGE
A-METHYL STYRENE	PERS TWA	100	31	.00	.01	.07
ACETOPHENCNE	PERS TWA	25***	31	.03	.01	.01
ASBESTOS	PERS STEEL	2	1	.00	.00	.00
	AREA TWA		3	.05	.00	.02
BENZENE	PERS TWA	10	101	6.72	.05	.60
	AREA STEEL		15	9.20	.10	1.92
BUTADIENNE	PERS TWA	1000	43	10.00	10.00	10.00
CUMENE	PERS TWA	50	37	.10	.01	.03
CYCLOHEXANE	PERS TWA	300	43	10.00	10.00	10.00
CYCLOHEXENE	PERS TWA	300	43	10.00	10.00	10.00
CYCLOPENTADIENE	PERS TWA	75	43	10.00	10.00	10.00
UMP	PERS TWA	10	12	.13	.01	.06
	AREA STEEL		6	4.58	.17	2.54
ETHANOLAMINE	AREA STEEL	3	2	.01	.01	.01
ETHYL BENZENE	PERS TWA	100	36	.90	.01	.17
HEPTANE	PERS TWA	400	43	10.00	10.00	10.00
METHYL ACETYLENE-PROPEDIEN	PERS TWA		43	10.00	10.00	10.00
NAPHTHALENE	PERS TWA	10	31	.07	.01	.01
OCTANE	PERS TWA	300	43	10.00	10.00	10.00
OXYLFNE	PERS TWA	100	35	1.04	.01	.19
PENTANE	PERS TWA	600	43	10.00	10.00	10.00
PPAH'S	AREA TWA	0.2	3	.01	.01	.01
PROPYLALCOHOL	PERS TWA	200	43	10.00	10.00	10.00
STYRENE	PERS TWA	5***	33	3.11	.01	.33
TOLUENE	PERS TWA	100	35	2.77	.01	.63

• Engineering controls being implemented on
CEA 3382.
• Respiratory protection procedures implemented.

LEGEND

* - AS PERSONNEL TWA
** - AS DUST
*** - NONSAUTO STANDARD
I.D. - INITIAL DETERMINATION
(NO EXPOSURE)

LAM000885

MAP 005059

LAM000886

MAP 005060

CHOCOLATE FACTORY INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT- EIMV	SAMPLING HISTORY	REL	NO OF SAMPLES	HI	LU	AVERAGE
SUBSTANCE	PERS TWA	90	12	87.00	77.00	84.00
MOIST						
AMMONIA		50		I.D.		
CARBON BLACK				I.D.		
CHROMIUM				I.D.		
FORMIC ACID		5		I.D.		
HYDROGEN SULFIDE		10		I.D.		
METHANOL		200		I.D.		
METHYL MERCAPTAN		0.5		I.D.		
NICKEL		1		I.D.		
NITRIC OXIDE		25		I.D.		
NITROGEN DIOXIDE		5		I.D.		
PENTANE		600		I.D.		
PHENOL		5		I.D.		
SODIUM HYDROXIDE		2**		I.D.		
SULPHUR DIOXIDE		5		I.D.		
OCTANE		300		I.D.		
VINYL TOLUENE		100		I.D.		
PHENOL		5		I.D.		
DIPHENYL		.2		I.D.		

LEGEND

* - AS PERSONNEL TWA
 ** - AS DUST
 *** - MONSANTO STANDARD
 I.D. - INITIAL DETERMINATION
 (NO EXPOSURE)

CHOCOLATE HAYOU INDUSTRIAL HYGIENE SUMMARY

DEPT= GEN MAINT	SAMPLING HISTORY	PEL	NO OF SAMPLES	HI	LO	AVERAGE	CORRECTIVE ACTION / COMMENTS
SUBSTANCE							
A METHYL STYRENE	PERS TWA	100	83	.35	.01	.03	
ACETONE	PERS TWA	1000	84	10.37	.00	.41	
ACETONITRILE	PERS TWA	40	80	.42	.00	.08	
ACETOPHENONE	PERS TWA	25***	77	.44	.01	.04	
ACROLEIN	PERS TWA	0.1	81	21.74	.01	.40	• Engineering controls being implemented under CEA 3397 and 3454.
ACRYLONITRILE	PERS TWA	2	84	2.16	.01	.11	• Respiratory protection procedures implemented.
ASBESTOS	AREA STEL	2	2	.00	.00	.00	
BENZENE	PERS TWA	10	125	2.74	.01	.40	• Engineering controls being implemented under CEA 3382.
	PERS STEL	20	1	.38	.34	.34	• Respiratory protection procedures implemented.
	AREA STEL		3	31.30	4.30	13.60	
CUMENE	PERS TWA	50	94	.47	.01	.11	
ETHYL BENZENE	PERS TWA	100	97	1.44	.01	.10	
NAPHTHALENE	PERS TWA	10	78	.91	.01	.03	
OXYLENE	PERS TWA	100	81	.43	.01	.05	
STYRENE	PERS TWA	5***	92	.40	.00	.07	
TOLUENE	PERS TWA	100	94	1.44	.01	.23	
NOISE	PERS TWA	90	21	86.00	65.00	75.81	

LEGEND

* - AS PERSONNEL TWA

** - AS DUST

*** - MONSANTO STANDARD

I.D. - INITIAL DETERMINATION (NO EXPOSURE)

CHOCOLATE BAYOU INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT= GEN PLANT	SAMPLING HISTORY	REL	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
A METHYL STYRENE						
ACETONE	AREA OTHER	100	7	.31	.01	.08
	AREA TWA	1000	12	2.53	.03	.43
	AREA STEL		3	.48	.12	.27
	AREA OTHER		35	11.42	.01	1.58
ACETONITRILE						
	AREA TWA	40*	12	1.33	.01	.20
	AREA STEL		3	.04	.01	.02
	AREA OTHER		33	4.52	.01	.20
ACETOPHENONE						
ACROLEIN	AREA OTHER	25***	3	.01	.01	.01
	AREA TWA	0.1	12	.15	.01	.08
	AREA STEL		3	.01	.01	.01
	AREA OTHER		35	18.47	.01	1.65
ACRYLONITRILE						
	AREA TWA	2*	12	5.40	.01	.81
	AREA STEL		3	.03	.01	.02
	AREA OTHER		37	6.49	.01	.32
ASBESTOS						
	PERS STEL	5	2	.00	.00	.00
BENZENE						
	AREA STEL	10*	1	6.08	6.06	6.06
	AREA OTHER		13	5.83	.15	1.45
CUMEN						
	AREA STEL	50*	1	.26	.26	.26
	AREA OTHER		13	3.58	.02	.95
ETHYL BENZENE						
	AREA OTHER	100	10	.25	.01	.09
1,4-DITHALENE						
	AREA OTHER	10	7	.10	.01	.05
1,4-DIFLPE						
	AREA OTHER	100	8	.72	.01	.14
STYRENE						
	AREA OTHER	5***	12	8.58	.01	2.18
TOLUENE						
	AREA STEL	100	1	.20	.20	.20
	AREA OTHER		13	.85	.04	.29

LEGEND

- * - AS PERSONNEL TWA
- ** - AS DUST
- *** - NONSANTO STANDARD
- I.D. - INITIAL DETERMINATION (NO EXPOSURE)

CORRECTIVE / COMMENTS

LAM000889

CHOCOLATE BAYOU INDUSTRIAL HYGIENE SUMMARY

DEPT- HYDRO	PEL	RESULTS	CORRECTIVE ACTION/COMMENTS
SUBSTANCE			
MESITYL OXIDE	25	<10 ppm	(Analyzed with Ethyl Benzene)
DIMETHYL FORMAMIDE	10	I.D.	
DIMETHYLAMINE	10	I.D.	
METHANOL	200	I.D.	
METHYL ACETYLENE PROPADIENE	1000	I.D.	
N-OCTANE	300	I.D.	
PHENOL	5	I.D.	
PROPANE	300	I.D.	
SULFUR DIOXIDE	5	I.D.	

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005064

LAM000890

CHOCOLATE MAKING INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLING HISTORY	PEL	NO. OF SAMPLES	HI	LO	AVERAGE
ANISYL STYRENE	PEPS TWA APEA TWA	100	23 1	.07 .01	.01 .01	.01 .01
ACETONE	PEPS TWA APEA TWA	1000	6 7	4.28 1.25	.01 .12	.36 .54
ACETONITRILE	PEPS TWA APEA TWA	40	6 7	1.41 .49	.01 .01	.05 .12
ACETOPHENONE	PEPS TWA APEA TWA	25***	24 1	.10 .99	.01 .99	.02 .99
ACROLEIN	PEPS TWA APEA TWA	0.1	6 7	.90 .10	.01 .02	.07 .07
ACRYLONITRILE	PEPS TWA APEA TWA	2	63 5	.77 15.27	.01 .04	.10 5.03
BENZENE	PEPS TWA APEA TWA	10	4 3	.69 .76	.01 .01	.20 .26
CHLORF	PEPS TWA APEA TWA	50	4 1	.67 .05	.01 .05	.09 .05
ETHYL BENZENE	PEPS TWA APEA TWA	100	23 1	.15 .38	.01 .38	.02 .38
METHYLENE	PEPS TWA APEA TWA	10	24 1	.10 .01	.01 .01	.02 .01
XYLENE	PEPS TWA APEA TWA	100	4 1	.22 .07	.01 .07	.04 .07
STYRENE	PEPS TWA APEA TWA	5***	23 1	.44 .03	.01 .03	.03 .03
TOLUENE	PEPS TWA APEA TWA	100	24 1	.89 6.92	.02 6.92	.15 6.92

• Engineering controls being implemented under CEA 3397 and 3454.
• Respiratory protection procedures implemented.
• Engineering controls being implemented under CEA 3382.
• Respiratory protection procedures implemented.

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005065

LAM000891

COCCOATI MAYOII INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEFIN = INDUSTRIAL HYGIENE	SAMPLING HISTORY	WFI	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
AMETHYL STYRENE						
ACETONE	PEPS STEL	100	1	.01	.01	.01
ACETONITRILE	PEPS STEL	1000	4	100.00	2.80	32.55
ACETOPHENONE	PEPS STEL	40	2	.30	.17	.24
	PEPS STEL	25***	1	.01	.01	.01
	PEPS OTHER		1	4.80	4.80	4.80
ACROLEIN	PEPS STEL	0.1	1	.11	.11	.11
ACRYLONITRILE	PEPS STEL	2	12	60.30	.10	11.72
BENZENE	PEPS STEL	10	10	54.41	.33	16.33
	PEPS OTHER		1	2.56	2.56	2.56
CINENE	PEPS STEL	50	7	11.17	.01	2.68
ETHYL BENZENE	PEPS STEL	100	4	.10	.02	.07
MAPIHTHALENE	PEPS STEL	10	1	.01	.01	.01
	PEPS OTHER		1	3.69	3.69	3.69
OXYLENE	PEPS STEL	100	2	.10	.05	.08
STYRENE	PEPS STEL	5***	3	30.22	.01	16.63
TOLUENE	PEPS STEL	100	3	.42	.14	.25

•Engineering controls being implemented under CEA 3397 and 3454
•Respiratory protection procedures implemented.
•Engineering controls being implemented under CEA 3382.
•Respiratory protection procedures implemented.

•Same as Benzene (above).

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005066

LAM000892

CUMULATIVE MAYON INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLING HISTORY	PFL	NO OF SAMPLES	HI	LO	AVERAGE
DELT = HYDRO						
1-METHYL STYRENE	AREA STEL	100	3	2.54	.03	1.55
	PEPS TWA		16	.15	.01	.02
	AREA TWA		3	.01	.01	.01
	AREA OTHER		1	.20	.20	.20
ACETOPHENONE		25***	17	.11	.01	.02
	PEPS STEL		1	2.82	2.82	2.82
	AREA TWA		3	.01	.01	.01
	AREA STEL		7	7.51	2.36	3.81
	AREA OTHER		1	.01	.01	.01
ACRYLONITRILE			5	.05	.01	.03
	PEPS STEL		1	.12	.12	.12
	AREA TWA		3	.17	.02	.10
	AREA STEL		4	.52	.15	.28
ASBESTOS		2	1	.30	.30	.30
	AREA TWA		6	.04	.00	.02
BENZENE		10	15	70.22	.02	3.77
	PEPS STEL		1	.77	.77	.77
	AREA TWA		3	.22	.10	.17
	AREA STEL		10	226.10	.10	30.84
	AREA OTHER		7	2.64	.36	1.03
BUTADIENE		1000	23	<10.00	<10.00	<10.00
	AREA TWA		3	<10.00	<10.00	<10.00
	AREA OTHER		7	<10.00	<10.00	<10.00
CLIFENE		50	23	.21	.01	.07
	PEPS TWA		3	.02	.01	.02
	AREA STEL		3	1.40	.45	.78
	AREA OTHER		3	.04	.02	.03
CYCLOHEXANF		300	23	<10.00	<10.00	<10.00
	AREA TWA		3	<10.00	<10.00	<10.00
	AREA OTHER		7	<10.00	<10.00	<10.00
CYCLOHEXENE		300	23	<10.00	<10.00	<10.00
	PEPS TWA		3	<10.00	<10.00	<10.00
	AREA TWA		7	<10.00	<10.00	<10.00
	AREA OTHER		23	<10.00	<10.00	<10.00
CYCLOPENTADIENE		75	23	<10.00	<10.00	<10.00

• Engineering controls being implemented on CEA 3382.
• Respiratory protection procedures implemented.

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION
(NO EXPOSURE)

LAM000893

MAP 005067

UNION CARBIDE HAZARDOUS WASTE TREATMENT SUMMARY

CORRECTIVE / COMMENTS
ACTION

TEST= NTA	SAMPLING HISTORY	PH	NO. OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
AMMONIA	AREA TWA	25*	6	11.21	1.70	5.53
ACETOS	AREA TWA	2	1	.02	.02	.02
FORMALDEHYDE	AREA OTHER	2*	4	.16	.01	.06
HYDROGEN CYANIDE (HCN)	AREA TWA	10*	3	.25	.25	.25
NOISE	PFDS TWA	90	6	65.00	65.00	65.50
NTA	PFDS OTHER	1**	11	1.46	.01	.2R
	PERS TWA (Biological)		44	NO DETECTABLE NTA IN URINE.		
ACETIC ACID		10			I.D.	
HYDROGEN PEROXIDE		1			I.D.	
SODIUM HYDROXIDE		2**			I.D.	
SULFUR DIOXIDE		5			I.D.	

* Dust Samples--Exposures may occur during loading per Car Loading, Engr. Project CB-77-1014 for improved ventilation & dust collection to be completed first quarter 1979. Respirators req'd.
* DNEH Study - 1977.

LEGEND

- AS PERSONNEL TWA
- AS DUST
- MONSANTO STANDARD
- I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005068

LAM000894

COGNATE LABORATORY HYGIENE SUMMARY

DEPT: PHENOL

DATE: 7/6/77

SAMPLING HISTORY

DEPT: PHENOL

DATE: 7/6/77

SUBSTANCE

1,4-DIMETHYL STYRENE

1,4-DIMETHYL STYRENE

ACETOPHENONE

AMMONIA

ACRYSTOS

BENZENE

CLIMENE

DIETHYL

ETHYL BENZENE

HEPTHALENE

LAM000895

HEPTHALENE

OXYLENE

PHENOL

PHENYL ETHER

NO OF SAMPLES HI LO AVERAGE

100	PEPS TWA	10	.09	.01	.03
	PEPS STEL	4	.10	.01	.06
	AREA TWA	4	.05	.01	.02
	AREA STEL	6	.03	.01	.02
25***	PEPS TWA	4	.20	.01	.02
	PEPS STEL	4	2.27	.01	.91
	AREA TWA	4	.01	.01	.01
	AREA STEL	8	1.79	.01	.45
25*	AREA STEL	6	52.00	1.00	15.83
2	PEPS STEL	2	.00	.00	.00
	AREA TWA	5	.04	.00	.01
10	PEPS TWA	10	200.36	.04	11.29
20	PEPS STEL	9	53.19	.37	11.79
	AREA TWA	5	5.31	.01	1.32
	AREA STEL	19	160.00	.10	16.42
50	PEPS TWA	37	34.09	.01	3.69
	PEPS STEL	9	1.67	.32	.75
	AREA TWA	4	.26	.02	.15
	AREA STEL	11	59.20	.30	7.72
0.2	PEPS TWA	4	.01	.01	.01
	AREA TWA	1	.01	.01	.01
100	PEPS TWA	35	.18	.00	.05
	PEPS STEL	4	.20	.10	.14
	AREA TWA	4	.70	.01	.25
	AREA STEL	6	.55	.08	.20
10	PEPS TWA	4	.10	.01	.02
	PEPS STEL	9	1.88	.01	.87
	AREA TWA	4	.03	.01	.02
	AREA STEL	7	1.58	.01	.48
90	PEPS TWA	8	89.00	65.00	78.75
100	PEPS TWA	34	15.11	.01	.66
	PEPS STEL	4	.11	.04	.09
	AREA TWA	4	.84	.01	.28
	AREA STEL	7	.79	.01	.14
5*	AREA STEL	6	25.10	.30	4.77
100	PEPS TWA	100	BIOLOGICAL SAMPLES ALL < 1 ppm EXPOSURE.		
5*	PEPS TWA	4	.01	.01	.01
	AREA TWA	1	.02	.02	.02

Engineering controls being implemented under CEA 3382.
Sample boxes installed.
Respiratory protection procedures implemented.

Same as Benzene (see above).

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MORSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005069

GENERAL PAVCO INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLE HISTORY	REL	NO OF SAMPLES	HI	LO	AVERAGE
ACETONE	APFA STEL	10**	2	.10	.10	.10
MESITYL OXIDE	PERS TWA	5***	30	.28	.01	.04
ACETALDEHYDE	PERS STEL		4	.14	.04	.10
	APFA TWA		4	.02	.01	.01
	APFA STEL		6	1.79	.03	.34
	PERS TWA	100	34	.76	.01	.15
	PERS STEL		4	.17	.16	.17
	APFA TWA		4	.76	.02	.39
	APFA STEL		6	.45	.14	.21
	PERS TWA	1000	14	All < 50 ppm		
		25		All < 10 ppm		
		100		I.D.		

(Measured with Ethyl Benzene)

LEGEND

- * - AS PERSONNEL TWA
- ** - AS DUST
- *** - MONSANTO STANDARD
- I.D. - INITIAL DETERMINATION (NO EXPOSURE)

MAP 005070

LAM000896

CYTOCHALF HAYON INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

SUBSTANCE	SAMPLING HISTORY	PFI	NO OF SAMPLES	HI	LO	AVERAGE
ANETHYL STYRENE	PEPS TWA	100	3	.01	.01	.01
ACETONE	PEPS TWA AREA OTHER	1000	1 3	1.91 .53	1.91 .17	1.91 .37
ACETONITRILE	PEPS TWA AREA OTHER	40	1 3	.05 .07	.05 .03	.05 .05
ACETOPHENONE	PEPS TWA AREA OTHER	25***	3 5	.01 4.40	.01 .14	.01 2.37
ACROLEIN	PEPS TWA AREA OTHER	0.1	1 3	2.10 .08	2.10 .06	2.10 .07
ACRYLONITRILE	PEPS TWA AREA OTHER	2	1 3	.10 .03	.10 .01	.10 .02
BENZENE	PEPS TWA AREA TWA	10	3 2	.19 .04	.13 .04	.16 .04
CUMENE	PEPS TWA	50	3	.01	.01	.01
ETHYL BENZENE	PEPS TWA	100	3	.09	.01	.04
NAPHTHALENE	PEPS TWA	10	3	.01	.01	.01
STYRENE	PEPS TWA	5***	3	.04	.01	.02
TOLUENE	PEPS TWA	100	3	.22	.09	.14
XYLENE	PEPS TWA	100	3	.35	.13	.23

MAP 005071

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

LAM000897

CHOCOLATE COMPANY INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

TEST RESULTS	SAMPLING HISTORY	PEL	NO OF SAMPLES	NI	I.O.	AVERAGE
SUBSTANCE						
ASBESTOS	ALFA TWA	2	2	.03	.00	.02
	PEPS TWA	0.2	3	.01	.01	.01
	ALFA TWA		4	1.02	.01	.14
	PEPS TWA		1	.01	.01	.01
	ALFA TWA		2	.01	.01	.01
DETOXIFYING	PEPS TWA	0.2	1	.01	.01	.01
	ALFA TWA		2	.01	.01	.01
FORMALDEHYDE	ALFA STTL	3*	17	5.72	.02	1.10
	ALFA TWA		2	.35	.24	.30
PERFUMES	ALFA STTL	5*	3	5.40	.30	2.07
	PEPS TWA	0.2	3	.05	.02	.03
	ALFA TWA		4	.42	.01	.11
THORIUM OXIDE						
ASBESTOS		2		I.D.		
FORMIC ACID		5		I.D.		
METHANOL		200		I.D.		
OXALIC ACID		1**		I.D.		
SILVER		0.01		I.D.		
SODIUM HYDROXIDE		2**		I.D.		
SULFURIC ACID		1**		I.D.		
TRIBUTYL PHOSPHATE		5**		I.D.		
TRIETHYL AMINE		25		I.D.		

Highest area concentrations are near dome lid during TRUCK/CAR loading, with proper work practices/respiratory equip. personnel exposures are below PEL.
Eng.Proj. CB77-1188 approved for improved tank car cleaning facilities.

• Radiation measurements taken during Catalyst Changeout--all levels below PEL.

LAM000898

MAP 005072

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

LOCAL AIR POLLUTION INDUSTRIAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DEPT= SAM

SUBSTANCE

SAMPLING
METHOD

PEL

RESULTS

NO OF SAMPLES HI LO AVERAGE

METHYL STYRENE

PEPS TWA
APEA TWA
APEA STEL

100

4

1.20

.01

.04

ACETOPHENONE

PEPS TWA
APEA TWA
APEA STEL

25***

4

2.03

.01

.06

ACETOS

PEPS STEL
APEA TWA

2

1

.00

.00

.00

BENZENE

PEPS TWA
APEA TWA
APEA STEL

10

1-2

6.44

.01

.72

CUMENE

PEPS TWA
APEA TWA
APEA STEL

50

1-4

3.57

.01

.12

ETHYL BENZENE

PEPS TWA
APEA TWA
APEA STEL

100

10-3

.41

.01

.04

HYDROGEN FLUORIDE

PEPS TWA
APEA TWA
APEA STEL

3

7

<1.50

<1.50

<1.50

PARATHALENE

PEPS TWA
APEA TWA
APEA STEL

10

4-6

.17

.01

.02

PCPCE

PEPS TWA

90

6

76.00

70.00

72.00

OXYLENE

PEPS TWA
APEA TWA
APEA STEL

100

4-6

2.03

.01

.07

STYRENE

PEPS TWA
APEA TWA
APEA STEL

5***

4-8

5.00

.01

.11

TOLLENE

PEPS TWA
APEA TWA
APEA STEL

100

10-4

1.43

.01

.14

LAM000899

MAP 005073

LEGEND

* - AS PERSONNEL TWA

** - AS DUST

*** - MONSANTO STANDARD

I.D. - INITIAL DETERMINATION

(NO EXPOSURE)

- Engineering controls being implemented under CEA 3382.
- Respiratory protection procedures implemented.
- Sample boxes installed.

CORRECTIVE / COMMENTS
ACTION

TEST: SORBITOL	SAMPLE INQ. HISTORY	PTL	NO OF SAMPLES	HI	LO	AVERAGE
RESISTANCE	APFA STFL	100	1	.01	.01	.01
A-METHYL STYRENE						
ACETONE	PEPS TWA APFA TWA	1000	2 5	3.33 .17	.01 .00	.85 .07
ACETOPHENONE	APFA STFL	25**	1	.01	.01	.01
ACETOSTOL	APFA TWA	2	1	.02	.02	.02
BENZENE	APFA STFL	10*	1	.14	.14	.14
CARBON	PEPS STFL	10**	2	1.20	.01	.61 }
CROTONALDEHYDE	PEPS TWA APFA TWA	2	2 5	.19 .19	.01 .00	.05 .06
CUMENE	APFA STFL	50	1	.01	.01	.01
DICHTOMACEOUS FATH	PEPS STFL	10**	2	1.30	1.00	1.15 }
ETHYL BENZENE	APFA STFL	100	1	.03	.03	.03
HYDROGEN CHLORIDE	APFA CHIL	5	4	2.14	2.00	2.05
ISOPROPYL ALCOHOL	PEPS TWA APFA TWA	400	2 5	7.55 3.59	.01 .00	.55 .86
METHYL ALCOHOL	PEPS TWA	200	24	155.00	2.90	22.08
NAPHTHALENE	APFA STFL	10	1	.01	.01	.01
POTASSIUM SORBATE	APFA UTHER	10**	2	16.31	11.54	13.93 }
SORBITIC ACID	APFA UTHER	10**	14	27.79	.05	6.60 }
STYRENE	APFA STFL	5**	1	.01	.01	.01
TOLUENE	APFA STFL	100	1	.10	.10	.10
XYLENE	APFA STFL	100	1	.02	.02	.02

- No significant exposure under normal operating conditions, decontamination procedures have been upgraded to reduce exposure, significant modifications/procedures are being implemented to reduce exposures.

MAP 005074

LAM000900

	5
ACETIC ANHYDRIDE	
* * *	
ACETIC ACID	10
* * *	
	<u>LEGEND</u>
* - AS PERSONNEL, TWA	*
* - AS DUST	*
* - MONSANTO STANDARD	*
I.D. - INITIAL DETERMINATION	*
(NO EXPOSURE)	*

COMPARATIVE PERSONAL HYGIENE SUMMARY

CORRECTIVE / COMMENTS
ACTION

DATE UTIL	SAMPLING HISTORY	PH	NO OF SAMPLES	HI	LO	AVERAGE
SUBSTANCE						
ACETONE	DEFS STPL AREA TWA	2	1	.00	.00	.00
			5	.20	.00	.07
NOISE	DEFS TWA	90	4	86.50	82.00	84.00
	AREA TWA	0.2	1	.01	.01	.01
PPAH'S		1		I.D.		
CHLORINE		2**		I.D.		
SODIUM HYDROXIDE		1**		I.D.		
SULFURIC ACID		1.5		I.D.		
METHYL MERCAPTAN				I.D.		
9 MISCELLANEOUS POWDERS				I.D.		

*Only exposure occurs during emergencies.
*Work practices & respiratory protection procedures have been implemented.

*All are in small quantities, handled carefully with proper protective equipment.

MAP 005075

LEGEND
* - AS PERSONNEL TWA
** - AS DUST
*** - MONSANTO STANDARD
I.D. - INITIAL DETERMINATION (NO EXPOSURE)

LAM000901

CHOCOLATE BAYOU INDUSTRIAL HYGIENE SUMMARY

DEPT- SUBIC	DELT	RESULTS	CORRECTIVE ACTION / COMMENTS
SUBSTANCE			
PHOSPHORIC ACID	1**	I.D.	
POTASSIUM HYDROXIDE	2**	I.D.	
SODIUM HYDROXIDE	2**	I.D.	
ZINC		I.D.	
ANTHRA	25	I.D.	
KETENE	0.5	I.D.	
DINETENE	NONE		

} Process under vacuum, decontamination procedures appear adequate, no noticeable odor under normal operations.

} No significant exposure under normal operations, decontamination procedures have been upgraded to minimize personnel exposures. Not considered at this time to be significant exposure problem except during spills.

 * LEGEND *
 * - AS PERSONNEL TWA *
 * - AS DUST *
 * - MONSANTO STANDARD *
 * I.D. - INITIAL DETERMINATION *
 * (NO EXPOSURE) *

MAP 005076

LAM000902

1979 MONITORING SCHEDULE

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Benzene	AN	Phenol	Benzene	AN	Asbestos	Benzene	AN	Heat	Benzene	AN	Asbestos
Toluene	Acrolein	HCL	Toluene	Acrolein	Heat	Toluene	Acrolein	DMF	Toluene	Acrolein	
EB,MO	Acetone	H ₂ SO ₄	EB,MO	Acetone	H ₂ S	FM,MO	Acetone	Furfural	EB,MO	Acetone	
Cumene	Acetonitrile	NaOH	Cumene	Acetonitrile	Acetonitrile	Cumene	Acetonitrile	Phenol	Cumene	Acetonitrile	
Xylene	HCN	KOH	Xylene	HCN	Crotonaldehyde	Xylene	HCN	Acetic Acid	Xylene	HCN	
Styrene	Crotonaldehyde	NH ₃	Styrene	MEA	Na ₂ CO ₃	Styrene	Heat	HCL	Styrene	PPAH	
ANS	Formaldehyde	Formaldehyde	ANS	HQ		ANS	NTA	Formaldehyde	ANS	H ₂ S	
Acetophenone	Noise	Ketene	Acetophenone	HQ		Acetophenone		MeOH	Acetophenone		
Naphthalene	Acetic Acid	DiKetene	Naphthalene	Diphenyl		Naphthalene		Sorbate	Naphthalene		
Butadiene	Acetic Anhydride	MeOH	Butadiene	DPO		Butadiene		Sorbic Acid	Butadiene		
Cyclohexane		Sorbate	Cyclohexane	PPAH		Cyclohexane		IPA	Cyclohexane		
Cyclohexene		Sorbic Acid	Cyclohexene			Cyclohexene		Acetic Anhydride	Cyclohexene		
Cyclopentadiene		IPA	Cyclopentadiene			Cyclopentadiene			Cyclopentadiene		
MAP			MAP			MAP			MAP		
Octane			Octane			Octane			Octane		
Heptane			Heptane			Heptane			Heptane		
Pentane			Pentane			Pentane			Pentane		
Propyl Alcohol			Propyl Alcohol			Propyl Alcohol			Propyl Alcohol		
			Carbon			Heat			Crotonaldehyde		

HF - As Needed

Catalyst 41 - As Needed

Silica - As Needed

Welding Fumes - As Needed

MAP 005077

LAM000903

*BENZENE GROUP

Ethylene
Hydrocarbons
SAB
Phenol
Env. Control
Distribution
Mech. Maint.
I&E Maintenance
Labs

**AN GROUP

AN
Env. Control
Distribution
I&E Maintenance
Mech. Maint.
Labs

ACETIC ACID

Distribution
AN
Sorbic

FORMALDEHYDE

Formalin
NTA/IDA

CROTONALDEHYDE

Sorbic
Distribution

PPAH

Ethylene
Hydrocarbons
Phenol
Distribution
Utilities

HCL

Distribution
Sorbic
IDA

PHENOL

Phenol
Distribution
DPO
Env. Control

H₂SO₄

Resins
AN
Phenol
Env. Control
NTA/IDA
Distribution

NaOH

Ethylene
Resins
AN
Phenol
NTA/IDA
Distribution
Sorbic

KOH

Sorbic

Diketene/
Ketene

Sorbic

MFA

Ethylene

HQ/NQ

AN

Diphenyl

DPO
Hydro
Ethylene

DPO

ASBESTOS

Total
Plant

NOISE

Total
Plant

HEAT STRESS

Total Plant
(as needed)

NTA

NTA

MH₃

Distribution
NTA
AN
Sorbic

HCN

NTA/IDA
AN
Dist.
Env. Control

DMF

Ethylene

FURFURAL

Hydro

HF

SAB

CAT 41

Na₂CO₃

Phenol

ACETIC ANHYDRIDE

Sorbic

SORBATE/SORBIC ACID

Sorbic

H₂S

Hydrocarbons

Isopropylalcohol

Sorbic

*BENZENE GROUP: Benzene, Toluene, EB, MO, Cumene, Xylene, Styrene, AMS, Acetophenone, Naphthalene, Butadiene, Cyclohexane, Cyclohexene, Cyclopentadiene, MAP, Octane, Heptane, Pentane, Propyl Alcohol

**AN GROUP: AN, Acrolein, Acetone, Acetonitrile, HCN

CHEMICALS ID IN 1978 & 1979

Sulfur Dioxide
Hydrogen Peroxide
Calcium Hydroxide
Carbon Dioxide
Carbon Monoxide
Formic Acid
Methyl Acetylene
Propane
Silver
Vinyl Toluene
Mercury
Methyl Mercaptan
Ethyl Alcohol

CHEMICALS ID IN 1978-TO BE
MEASURED IN 1979

Chlorine
Chromates
Tributyl Phosphate
Triethylamine
Acetaldehyde
Phosphoric Acid
Thorium Oxide

MAP 005079

LAM000905