

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase II ID No.	853
4	EPA ID No.	LAD001890367
5	Facility Name	Dupont Dow Elastomers
6	Facility Location	
7	City	LaPlace
8	State	LA
9	Unit ID Name/No.	HCl Recovery Unit
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	HCl Production Furnace
13	Combustor Type	
14	Combustor Characteristics	T-Thermal, liquid injection, down fired, 48 MMBtu/hr, dual parallel units with common APCS
15	Capacity (MMBtu/hr)	48
16	Soot Blowing	
17	APCS Detailed Acronym	WQ/3STGHCIABS/S/CWS
18	APCS General Class	WQ, LEWS
19	APCS Characteristics	Water spray quench, 3 stage HCl absorbers, vent scrubber, Dynawave caustic scrubber. Water used in 3-stage HCl and vent scrubbers; caustic used in Dynawave scrubber
20	Hazardous Wastes	Liq
21	Haz Waste Description	Chlorinated liq. wastes
22	Supplemental Fuel	Natural gas
23		Nat gas used during start up and shutdown, but not during normal operations
24	Stack Characteristics	
25	Diameter (ft)	1.5
26	Height (ft)	120
27	Gas Velocity (ft/sec)	20.5
28	Gas Temperature (°F)	90
29		
30	Permitting Status	HAF operation; Tier III for Cr, HCl, Cl ₂ ; Tier I for other metals
31	HWC Burn Status (Date if Terminated)	

	B	C
1	Cond Description	
2		
3	853C10	
4		
5	Report Name/Date	Source Emissions Survey of DuPont Dow Elastomers, HCl Recovery Unit Stack Risk Burn, April 1997, File Number 97-17A
6	Report Prepare	METCO Environmental
7	Testing Firm	METCO Environmental
8	Testing Dates	April 23-24, 1997
9	Cond Dates	Apr-97
10	Cond Description	Risk burn, normal operating cond
11	Content	PM, metals, CO, D/F
12		
13	853C11	
14		
15	Report Name/Date	Source Emissions Survey of DuPont Dow Elastomers, HCl Recovery Unit Stack Permit Burn, April 1997, File Number 97-17
16	Report Prepare	METCO Environmental
17	Testing Firm	METCO Environmental
18	Testing Dates	April 25-26, 1997
19	Cond Dates	Apr-97
20	Cond Description	Trial burn test
21	Content	DRE, PM, Cr (HCl/Cl ₂ testing performed, but results later considered invalid due to analytical difficulties)
22		
23	853C12	
24		
25	Report Name/Date	Source Emissions Survey of DuPont Dow Elastomers Halogen Acid Furnace Stack, September 1997, File Number 97-240A
26	Report Prepare	METCO Environmental
27	Testing Firm	METCO Environmental
28	Testing Dates	September 2-3, 1997
29	Cond Dates	Sep-97
30	Cond Description	Supplemental trial burn test
31	Content	PM, HCl/Cl ₂

	B	C	D	E	F	G	H	I	J	K	L	M
1	Stack Gas Emissions											
2												
3		Comments	Units	7% O2								
4												
5	853C10					R1		R2		R3		Cond Avg
6												
7	PM	E1	gr/dscf	y		0.0031		0.0046		0.0036		0.0038
8	Antimony		µg/dscm	n	nd	9.47	nd	8.24	nd	9.6		
9	Arsenic		µg/dscm	n	nd	0.303	nd	0.255	nd	0.36		
10	Barium		µg/dscm	n		4.5		23.75		3.43		
11	Beryllium		µg/dscm	n	nd	0.016	nd	0.017	nd	0.02		
12	Cadmium		µg/dscm	n	nd	0.352	nd	0.09	nd	0.11		
13	Chromium		µg/dscm	n		10.18		24.8		21.4		
14	Lead		µg/dscm	n	nd	6.4	nd	3.2	nd	3.4		
15	Mercury		µg/dscm	n	nd	0.29	nd	0.27	nd	0.41		
16	Silver		µg/dscm	n	nd	0.436	nd	0.78	nd	0.42		
17	Thallium		µg/dscm	n	nd	21.5	nd	16.9	nd	17.5		
18												
19	Sampling Train	PM/metals	E1									
20	Stack Gas Flowrate		dscfm			7980		8426		8287		8231
21	O2		%			4.5		4.5		4.3		4.4
22	Moisture		%			4.6		4.3		4.4		4.4
23	Temperature		°F			90		89		89		89.3
24												
25	Antimony	E1	µg/dscm	y	nd	8.0	nd	7.0	nd	8.0	100	7.7
26	Arsenic	E1	µg/dscm	y	nd	0.3	nd	0.2	nd	0.3		0.3
27	Barium	E1	µg/dscm	y		3.8		20.2		2.9		8.9
28	Beryllium	E1	µg/dscm	y	nd	0.0	nd	0.0	nd	0.0	100	0.0
29	Cadmium	E1	µg/dscm	y	nd	0.3	nd	0.1	nd	0.1	100	0.2
30	Chromium	E1	µg/dscm	y		8.6		21.0		17.9		15.9
31	Lead	E1	µg/dscm	y	nd	5.4	nd	2.7	nd	2.9	100	3.7
32	Mercury	E1	µg/dscm	y	nd	0.2	nd	0.2	nd	0.3	100	0.3
33	Silver	E1	µg/dscm	y	nd	0.4	nd	0.7	nd	0.4	100	0.5
34	Thallium	E1	µg/dscm	y	nd	18.2	nd	14.3	nd	14.7	100	15.8
35	SVM	E1	µg/dscm	y	100	5.7	100	2.8	100	2.9	100	3.8
36	LVM	E1	µg/dscm	y	3	8.9	1.08	21.3	1.7	18.3	1.7	16.1
37												
38	Particle Size Distribution	in microns										
39	0.5-1		% wt			0.6						
40	1-1.5		% wt			0.3						
41	1.5-2		% wt			1.7						
42	2-2.5		% wt			1						
43	2.5-5		% wt			23.8						
44	5-7.5		% wt			14.6						
45	7.5-10		% wt			6.7						
46	10-12.5		% wt			51.3						
47												
48	853C11					R1		R2		R3		Cond Avg
49												
50	PM	E1	gr/dscf	y		0.0075		0.0107		0.0079		0.0087
51	CO (RA)	E1	ppmv	y		14		18.5		12.2		14.9
52	CO (MHRA)	E1	ppmv	y		15.46		18.9		13.34		15.9
53	Chromium		µg/dscm	n		256.9		492.6		264.97		
54	Chromium (Hex)		µg/dscm	n		57.31		72.52		97.19		
55												
56	Sampling Train	PM/chlorine	E1									
57	Stack Gas Flowrate		dscfm			8680		8948		8337		8655
58	O2		%			6.8		6.7		5.8		6.4
59	Moisture		%			4.64		4.95		4.68		
60	Temperature		°F			89		90		89		
61												
62	Sampling Train	Chromium	E2									
63	Stack Gas Flowrate		dscfm			8879		8560		8824		
64	O2		%			6.8		6.7		5.8		
65	Moisture		%			4.58		4.53		4.61		
66	Temperature		°F			92		93		88		
67												
68	Chromium	E2	µg/dscm	y		253.3		482.3		244.1		326.5

	B	C	D	E	F	G	H	I	J	K	L	M
69	Chromium (Hex)	E2	µg/dscm	y		56.5		71.0		89.5		72.3
70	LVM	E2	µg/dscm	y		253.3		482.3		244.1		326.5
71												
72	POHC DRE		1,4-dichloro-2-butene									
73	Feedrate		lb/hr			197.14		202.3		223.78		
74	Emission Rate	E1	lb/hr			0		0		0		
75	DRE	E1	%		>	99.999	>	99.999	>	99.999		
76												
77	POHC DRE		Carbon Tetrachloride									
78	Feedrate		lb/hr			587.5		588.4		643.1		
79	Emission Rate	E1	lb/hr			0.004		0.003		0.003		
80	DRE	E1	%		>	99.999	>	99.999	>	99.999		
81												
82	POHC DRE		Chlorobenzene									
83	Feedrate		lb/hr			190.9		186.3		192.9		
84	Emission Rate	E1	lb/hr			2.65E-04		4.94E-04	nd	2.53E-04		
85	DRE	E1	%		>	99.999	>	99.999	>	99.999		
86												
87	853C12					R1		R2		R3		Cond Avg
88												
89	PM	E1	gr/dscf	y		0.0474		0.0435		0.0384		0.0431
90	CO (RA)	E1	ppmv	y		37.39		21.25		19.99		26.2
91	CO (MHRA)	E1	ppmv	y		43.57		22.01		20.74		28.8
92	HCl		ppmv	n		529.6		505.5		504.3		
93	Cl2		ppmv	n		2.2		1.9		1.7		
94												
95	Sampling Train		PM/chlorine	E1								
96	Stack Gas Flowrate		dscfm			8470		8528		8556		8518.0
97	O2		%			6.1		6.5		6.6		6.4
98	Moisture		%			8.4		7.93		7.5		
99	Temperature		°F			107		108		107		
100												
101	HCl	E1	ppmv	y		497.6		488.1		490.3		492.0
102	Cl2	E1	ppmv	y		2.1		1.8		1.7		1.9
103	Total Chlorine	E1	ppmv	y		501.7		491.7		493.6		495.7

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Feedstreams																	
2																		
3	853C10	Risk burn																
4																		
5	Feedstream Number																	
6	Feed Class																	
7	Feed Class 2																	
8	Feedstream Description																	
9	Total Feedrate	lb/hr																
10	Density	kg/l																
11	Heat Content	Btu/lb																
12	Thermal Feedrate	MMBtu/hr																
13	Viscosity	cst																
14	Ash	% wt																
15	Chlorine	% wt																
16	Antimony	ppmw																
17	Arsenic	ppmw																
18	Barium	ppmw																
19	Beryllium	ppmw																
20	Cadmium	ppmw																
21	Chromium	ppmw																
22	Lead	ppmw																
23	Mercury	ppmw																
24	Silver	ppmw																
25	Thallium	ppmw																
26	Selenium	ppmw																
27	Nickel	ppmw																
28																		
29	Gas Flowrate	dscfm																
30	Oxygen	%																
31																		
32	Feedrate MTEC Calculations																	
33	Ash	mg/dscm																
34	Chlorine	ug/dscm																
35	Antimony	ug/dscm																
36	Arsenic	ug/dscm																
37	Barium	ug/dscm																
38	Beryllium	ug/dscm																
39	Cadmium	ug/dscm																
40	Chromium	ug/dscm																
41	Lead	ug/dscm																
42	Mercury	ug/dscm																
43	Silver	ug/dscm																
44	Thallium	ug/dscm																
45	Selenium	ug/dscm																
46	Nickel	ug/dscm																
47	SVM	ug/dscm																
48	LVM	ug/dscm																
49																		
50																		
51																		
52	853C11	Trial burn																
53																		
54	Feedstream Number																	
55	Feed Class																	
56	Feed Class 2																	
57	Feedstream Description																	
58	Feed Rate	lb/hr																

	T	U	V	W	X	Y	Z	AA	AB
1									
2									
3									
4									
5	Cond Avg								
6	F2								
7	Total								
8	Total								
9									
10									
11									
12	48.25								
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33	28.1								
34	47679376								
35	170.6								
36	14.3								
37	21.4								
38	1.2								
39	2.4								
40	130.8								
41	190.3								
42	3.2								
43	28.6								
44	967.7								
45	333.1								
46	1039.9								
47	192.7								
48	146.3								
49									
50									
51									
52	Cond Avg	R1	R2	R3					Cond Avg
53									
54	F2	F3	F3	F3					F3
55	Spike	Total	Total	Total					Total
56	Spike	Total	Total	Total					Total
57	Spike	Total	Total	Total					Total
58									

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
59	Heat Content	Btu/lb			9550		9568			8773		9297						
60																		
61	Viscosity	cst	nd		6		6			6								
62	Ash	% wt			0.041		0.039			0.045		0.042						
63	Ash	g/hr			910.43		867.47			1009.78		929.23						
64	Chlorine	% wt			51.8		47.7			48.4		49.3						
65	Chlorine	g/hr			1150256.6		1060978.2			1086074.1		1099103						
66	Antimony	ppmw	nd		1.4 nd		1.5 nd			1.4		1.4						
67	Arsenic	ppmw	nd		0.12 nd		0.12 nd			0.12		0.12						
68	Barium	ppmw	nd		0.17 nd		0.18 nd			0.18		0.18						
69	Beryllium	ppmw	nd		0.01 nd		0.01 nd			0.01		0.01						
70	Cadmium	ppmw	nd		0.02 nd		0.02 nd			0.02		0.02						
71	Chromium	ppmw			1.3		1			0.95		1.1						
72	Chromium	g/hr											72.0				72.7	72.8
73	Lead	ppmw	nd		1.5 nd		1.6 nd			1.6		1.6						
74	Mercury	ppmw	nd		0.05 nd		0.01 nd			0.01		0.02						
75	Silver	ppmw	nd		0.23 nd		0.24 nd			0.24		0.24						
76	Thallium	ppmw	nd		7.9 nd		8.2 nd			8.1		8.1						
77																		
78	Gas Flowrate	dscfm			8680		8948			8337		8655						8337
79	Oxygen	%			6.8		6.7			5.8		6.4						5.8
80	Thermal Feedrate	MMBtu/hr			46.8		46.9			43.4		45.3						8948
81																		6.7
82	Feedrate MTEC Calculations																	8680
83	Ash	mg/dscm			60.90		55.90			65.70		61						8680
84	Chlorine	ug/dscm			76944399		68365154			70663707		71991087						6.8
85	Antimony	ug/dscm	100		208.1	100	215.2	100		204.6	100	209						8948
86	Arsenic	ug/dscm	100		17.8	100	17.2	100		17.5	100	18						6.7
87	Barium	ug/dscm	100		25.3	100	25.8	100		26.3	100	26						8948
88	Beryllium	ug/dscm	100		1.5	100	1.4	100		1.5	100	1						6.7
89	Cadmium	ug/dscm	100		3.0	100	2.9	100		2.9	100	3						8948
90	Chromium	ug/dscm	100		193.3	100	143.5	100		138.8	100	159						4683.4
91	Lead	ug/dscm	100		223.0	100	229.5	100		233.8	100	229						4735.1
92	Mercury	ug/dscm	100		7.4	100	7.4	100		1.5	100	3						4735.1
93	Silver	ug/dscm	100		34.2	100	34.2	100		35.1	100	35						4735.1
94	Thallium	ug/dscm	100		1174.5	100	1176.3	100		1183.6	100	1178						4735.1
95																		4735.1
96	SYM	ug/dscm	100		226.0	100	232.4	100		236.7	100	232						4735.1
97	LVM	ug/dscm	9		220.0	11	170.7	11		166.6	10	186						4735.1
98																		4735.1
99																		4735.1
100	853C12																	4735.1
101	Feedstream Number																	4735.1
102	Feed Class																	4735.1
103	Feed Class 2																	4735.1
104	Feed Class 2																	4735.1
105	Feedstream Description																	4735.1
106	Feed Rate	g/hr																4735.1
107	Heat Content	Btu/lb																4735.1
108	Viscosity	cst	nd		6		6			6		6						4735.1
109	Ash	% wt			0.29		0.32			0.35		0.32						4735.1
110	Ash	g/hr			912.6		864.5			1006.6		927.9						4735.1
111	Chlorine	% wt			54.8		55.6			49.3		53.2						4735.1
112	Chlorine	g/hr			1153019.3		1057408.1			1082673.3		1097700.2						4735.1
113																		4735.1
114	Gas Flowrate	dscfm			8470		8528			8556		8518						4735.1
115	Oxygen	%			6.1		6.5			6.6		6.4						4735.1
116	Thermal Feedrate	MMBtu/hr			423.0		41.3			47.6		43.2						4735.1

	T	U	V	W	X	Y	Z	AA	AB
59									
60									
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71	72.5								
72									
73									
74									
75									
76									
77									
78									
79	8655								
80	6.4		46.8		46.9		43.4		45.3
81									
82									
83			60.9		55.9		65.7		60.8
84			76944399.4		66365154.2		70663707.1		71991086.9
85	100		208.1	100	215.2	100	204.6	100	209.3
86	100		17.8	100	17.2	100	17.5	100	17.5
87	100		25.3	100	25.8	100	26.3	100	25.8
88	100		1.5	100	1.4	100	1.5	100	1.5
89	100		3.0	100	2.9	100	2.9	100	2.9
90	4739.6		5011.0		4826.9		4873.9		4903.9
91	100		223.0	100	229.5	100	233.8	100	228.8
92	100		7.4	100	1.4	100	1.5	100	3.4
93	100		34.2	100	34.4	100	35.1	100	34.6
94	100		1174.5	100	1176.3	100	1183.6	100	1178.1
95									
96	100		226.0	100	232.4	100	236.7	100	231.7
97	4739.6		5037.7		4854.2		4901.7		4931.2
98									
99									
100									
101									
102	Cond Avg								
103	F2								
103	Total								
104	Total								
105	Total								
106									
107									
108									
109									
110									
111									
112									
113									
114									
115									
116	43.2								

US EPA ARCHIVE DOCUMENT

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
117																		
118	Feedrate	MTEC	Calculations															
119	Ash		mg/dscm			59.6	57.6		67.4		61.5		59.6		57.6		67.4	
120	Chlorine		ug/dscm		75328141	70504655	72452689		72775235		75328141		70504655		72452689			

US EPA ARCHIVE DOCUMENT

117	T	U	V	W	X	Y	Z	AA	AB
118	61.5 72775235								
119									
120									

	A	B	C
1	Process Information		
2		Units	Cond Avg
3			
4	853C11		
5			
6	Combustion Temp	C	1450
7	Dynawave Scrubber		
8	pH		2.07
9	Blowdown/feed	gal/lb	0.117

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																
2	N																
3	Facility Name and ID:	DuPont LaPlace HAF															
4	Condition ID:	853C10															
5	Condition/Test Date:	Risk burn, normal operating cond, April 23, 1997															
6																	
7		I-TEF															
8		Wght Fact															
9					Run 1												
10	Detected in train (ng/dscm)				Total	Total	TEQ	TEQ	Total	Total	Total	TEQ	TEQ	Total	Total	TEQ	TEQ
11	2,3,7,8-TCDD	1	nd	0.0070	0.0070	0.0035	0.0035	0.0035	nd	0.005	0.0050	0.0025	0.0025	0.007	0.0070	0.0035	0.0035
12	TCDD Other	0															
13	1,2,3,7,8-PCDD	0.5	nd	0.0440	0.0220	0.0220	0.0110	nd	0.012	0.0060	0.0060	0.0030	nd	0.01	0.0050	0.0050	0.0025
14	PCDD Other	0															
15	1,2,3,4,7,8-HxCDD	0.1	nd	0.0890	0.0089	0.0445	0.0045	nd	0.015	0.0015	0.0075	0.0008	nd	0.014	0.0014	0.0070	0.0007
16	1,2,3,6,7,8-HxCDD	0.1	nd	0.1160	0.0116	0.0580	0.0058	nd	0.012	0.0012	0.0060	0.0006	nd	0.012	0.0012	0.0060	0.0006
17	1,2,3,7,8,9-HxCDD	0.1	nd	0.2150	0.0215	0.1075	0.0108	nd	0.015	0.0015	0.0075	0.0008	nd	0.01	0.0010	0.0050	0.0005
18	HxCDD Other	0															
19	1,2,3,4,6,7,8-HpCDD	0.01	nd	0.7450	0.0075	0.3725	0.0037	nd	0.03	0.0003	0.0150	0.0002	nd	0.012	0.0001	0.0060	0.0001
20	HpCDD Other	0															
21	OCDD	0.001	nd	0.9690	0.0010	0.4845	0.0005		0.057	0.0001	0.0570	0.0001	nd	0.027	0.0000	0.0135	0.0000
22	2,3,7,8-TCDF	0.1	nd	0.0590	0.0059	0.0295	0.0030	nd	0.047	0.0047	0.0235	0.0024	nd	0.043	0.0043	0.0215	0.0022
23	TCDF Other	0															
24	1,2,3,7,8-PCDF	0.05	nd	0.0760	0.0038	0.0380	0.0019	nd	0.045	0.0023	0.0225	0.0011	nd	0.031	0.0016	0.0155	0.0008
25	2,3,4,7,8-PCDF	0.5	nd	0.1680	0.0840	0.0840	0.0420	nd	0.047	0.0235	0.0235	0.0118	nd	0.039	0.0195	0.0195	0.0098
26	PCDF Other	0															
27	1,2,3,4,7,8-HxCDF	0.1	nd	0.5200	0.0520	0.2600	0.0260		0.075	0.0075	0.0750	0.0075	nd	0.056	0.0056	0.0280	0.0028
28	1,2,3,6,7,8-HxCDF	0.1	nd	0.1870	0.0187	0.0935	0.0094		0.032	0.0032	0.0320	0.0032		0.019	0.0019	0.0190	0.0019
29	2,3,4,6,7,8-HxCDF	0.1	nd	0.3480	0.0348	0.1740	0.0174		0.032	0.0032	0.0320	0.0032	nd	0.024	0.0024	0.0120	0.0012
30	1,2,3,7,8,9-HxCDF	0.1	nd	0.0150	0.0015	0.0075	0.0008	nd	0.015	0.0015	0.0075	0.0008	nd	0.012	0.0012	0.0060	0.0006
31	HxCDF Other	0															
32	1,2,3,4,6,7,8-HpCDF	0.01	nd	0.8410	0.0084	0.4205	0.0042		0.045	0.0005	0.0450	0.0005	nd	0.019	0.0002	0.0095	0.0001
33	1,2,3,4,7,8,9-HpCDF	0.01	nd	0.0670	0.0007	0.0335	0.0003	nd	0.017	0.0002	0.0085	0.0001	nd	0.014	0.0001	0.0070	0.0001
34	HpCDF Other	0															
35	OCDF	0.001	nd	0.1950	0.0002	0.0975	0.0001	nd	0.035	0.0000	0.0175	0.0000	nd	0.019	0.0000	0.0095	0.0000
36																	
37	O2 (%)				4.50		4.50			4.60		4.60			4.30		4.30
38																	
39	PCDD/PCDF (ng/dscm @ 7% O2)		100.0		0.2455		0.1228	76.8		0.0530		0.0326	96.4		0.0441		0.0228
40																	
41	TEQ Cond Avg																