	B	C
1	**Source Description**	
2		
3	Phase II ID No.	3019
4	EPA ID No.	PRD090021056
5	Facility Name	Squibb Manufacturing, Inc.
6	Facility Location	
7	City	Humacao
8	State	Puerto Rico
9	Unit ID Name/No.	Caloric 2 unit
10	Other Sister Facilities	Caloric 1 unit, Trane incinerator
11	Number of Sister Facilities	2
12	Combustor Class	Onsite incinerator
13	Combustor Type	Liquid injection
14	Combustor Characteristics	Vertically-fired liquid injection incinerator. Model No. AVS-1600 installed in 1988
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	Q/VS/PT/CHEAF
18	APCS General Class	WQ, HEWS, LEWS
19	APCS Characteristics	Quench, venturi scrubber. CHEAF to enhance PM removal. Packed bed tower reduces the HCl emissions by treating the effluent gas with caustic soda solution.
20	Hazardous Wastes	Liq
21	Haz Waste Description	Water spent solvent generated during the manufacuring process which are not amenable to recovery or re-use.
22	Supplemental Fuel	Misc fuel
23		Kerosene
24		
25	Stack Characteristics	
26	Diameter (ft)	1.67
27	Height (ft)	47.8
28	Gas Velocity (ft/sec)	
29	Gas Temperature (°F)	200
30		
31	Permitting Status	Tier I for all metal except Hg, As, Cr (tier III)
32	HWC Burn Status (Date if Terminated)	

	B	C
1	**Condition Description**	
2		
3	**3019C1**	
4		
5	Report Name/Date	Final Trial Burn Report for Caloric 2 Incinerator. November 1998
6	Report Prepare	ENSR Corporation
7	Testing Firm	ENSR Corporation
8	Testing Dates	August 27-28, 1998
9	Cond Dates	Aug-98
10	Condition Descr	Trial burn, min oper temp cond
11	Content	PM, DRE, HCl/Cl2, CO, PCDD/F
12		
13	**3019C2**	
14		
15	Report Name/Date	Final Trial Burn Report for Caloric 2 Incinerator. November 1998
16	Report Prepare	ENSR Corporation
17	Testing Firm	ENSR Corporation
18	Testing Dates	August 21-22, 1998
19	Cond Dates	Aug-98
20	Condition Descr	Trial burn, elevated oper temp cond
21	Content	PM, metals, HCl/Cl2, PCDD/F
22		
23	**3019C3**	
24		
25	Report Name/Date	Final Trial Burn Report for Caloric 2 Incinerator. November 1998
26	Report Prepare	ENSR Corporation
27	Testing Firm	ENSR Corporation
28	Testing Dates	September 2, 1998
29	Cond Dates	Sep-98
30	Condition Descr	Trial burn, min oper temp retest
31	Content	DRE

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Stack Gas Emissions 1**													
2														
3		Comments	Units	7% O2										
4														
5														
6	**3019C1**	**Trial Burn**				R1		R2		R3		R4		Cond Avg
7														
8	PM	E1	gr/dscf	y		0.0236		0.0235		0.0217		0.0215		0.0226
9	CO (RA)	E1	ppmv	y		30		3.1		3.6		7.3		11.0
10														
11	NOx		ppmv	n		134.4		120.6		122.20		115.1		
12	HCl		lb/hr			0.0449		0.0281		0.0358		0.0202		
13	Cl2		lb/hr		nd	0.0005		0.0031		0.0157		0.0149		
14														
15	POHC DRE	Monochlorobenzene												
16	POHC Feedrate		lb/hr			10.6		10.6		10.6		11		
17	Emission Rate	E2	lb/hr			1.37E-04		8.08E-05		1.10E-04		1.53E-04		
18	DRE	E2	%			99.9987		99.9992		99.999		99.9986		
19														
20	POHC DRE	1,2-Dichlorobenzene												
21	POHC Feedrate		lb/hr			5.29		5.3		5.3		5.3		
22	Emission Rate	E2	lb/hr			1.60E-04		7.90E-05		4.00E-04		1.50E-04		
23	DRE	E2	%			99.997		99.9985		99.9924		99.9972		
24														
25	POHC DRE	Methylene Chloride												
26	POHC Feedrate		lb/hr			554.39		559.29		559.56		559		
27	Emission Rate	E2	lb/hr		nd	7.00E-03	nd	7.00E-03	nd	7.10E-03	nd	6.80E-03		
28	DRE	E2	%			99.9987		99.9854		99.9987		99.9988		
29														
30	Sampling Train	PM, HCl/Cl2	E1											
31	Stack Gas Flowrate		dscfm			6649		6681		6999		6549.0		6719.5
32	O2		%			5.7		6.1		6.2		6.1		6.0
33	Moisture		%			13.7		12.9		13.4		13.1		13.3
34	Temperature		°F			196		200		200		201.0		199.3
35														
36	Sampling Train	DRE	E2											
37	Stack Gas Flowrate		dscfm			6575		6718		6430		6578		6575.3
38	O2		%											
39	Moisture		%											
40	Temperature		°F											
41														
42	Sampling Train	PCDD/F	E3											
43	Stack Gas Flowrate		dscfm			6387		6310		6424		6173.0		6323.5
44	O2		%			5.7		6.1		6.2		6.1		6.0
45	Moisture		%			13.9		13.4		13.1		12.9		13.3
46	Temperature		°F											
47														
48	NOx	E1	ppmv	y		123.0		113.3		115.6		108.1		115.01
49	HCl	E1	ppmv	y		1.1		0.7		0.9		0.5		0.80
50	Cl2	E1	ppmv	y	nd	0.006		0.039		0.190		0.2		0.12
51	Total Chlorine	E1	ppmv	y		1.12		0.78		1.24		1.01		1.04
52														
53	**3019C2**	**Trial Burn**				R1		R2		R3		R4		Cond Avg
54														
55	PM	E1	gr/dscf	y		0.0295		0.0139		0.0207				0.0214
56	CO (RA)	E1	ppmv	y		0		0		0				0
57														
58	NOx		ppmv	n		132.1		136.2		127.6				
59	HCl		lb/hr			0.0175		0.0405		0.0165				
60	Cl2		lb/hr			0.0138		0.0186		0.0138				
61														
62	Chromium (Hex)		ug/dscm	n	nd	0.42	nd	0.44	nd	0.43				
63	Arsenic		ug/dscm	n	nd	1.26	nd	1.23		1.49				
64	Beryllium		ug/dscm	n	nd	0.13	nd	0.12	nd	0.12				
65	Cadmium		ug/dscm	n	nd	0.25		0.66		0.56				
66	Chromium		ug/dscm	n		2.44		2.83		3.13				
67	Mercury		ug/dscm	n		3.93		5.06		5.51				
68	Antimony		ug/dscm	n		4.67		4.55		4.06				
69	Barium		ug/dscm	n		0.08		0.04		0.64				
70	Lead		ug/dscm	n	nd	2.53	nd	2.46	nd	2.41				
71	Silver		ug/dscm	n	nd	1.26	nd	1.23	nd	1.21				

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
72	Thallium		ug/dscm	n	nd	7.58	nd	7.38	nd	7.23				
73	Nickel		ug/dscm	n		1.73		1.85		3.7				
74	Selenium		ug/dscm	n	nd	7.58	nd	7.38	nd	7.23				
75														
76	Sampling Train	PM, HCl/Cl2	E1											
77	Stack Gas Flowrate		dscfm			6437		6363		6502				6434.0
78	O2		%			4.6		4.8		5.2				4.9
79	Moisture		%			16		15.3		15.6				15.6
80	Temperature		°F			200		202		201				201.0
81														
82	Sampling Train	metals	E2											
83	Stack Gas Flowrate		dscfm			6442		6070		6604				6372.0
84	O2		%			4.6		4.8		5.2				4.9
85	Moisture		%			91		92.7		83.5				89.1
86	Temperature		°F			208		208		203				206.3
87														
88	Sampling Train	Cr+6	E3											
89	Stack Gas Flowrate		dscfm			6602		6671		6729				6667.3
90	O2		%			4.6		4.8		5.2				4.9
91	Moisture		%			16.6		15.9		16.6				16.4
92	Temperature		°F			210		213		213				212.0
93														
94	Sampling Train	PCDD/F	E4											
95	Stack Gas Flowrate		dscfm			6128		6330		6423				6293.7
96	O2		%			4.6		4.8		5.2				4.9
97	Moisture		%			16.6		16.4		15.9				16.3
98	Temperature		°F											
99														
100	NOx	E1	ppmv			112.8		117.7		113.1				114.5
101	HCl	E1	ppmv	y		0.4		1.0		0.4				0.6
102	Cl2	E1	ppmv	y		0.2		0.2		0.2				0.2
103	Total Chlorine	E1	ppmv	y		0.75		1.45		0.74				1.0
104														
105	Chromium (Hex)	E3	ug/dscm	y	nd	0.36	nd	0.38	nd	0.38			100	0.4
106	Arsenic	E2	ug/dscm	y	nd	1.08	nd	1.05	nd	1.27			100	1.1
107	Beryllium	E2	ug/dscm	y	nd	0.11	nd	0.10	nd	0.10			100	0.1
108	Cadmium	E2	ug/dscm	y	nd	0.21		0.56		0.48			17	0.4
109	Chromium	E2	ug/dscm	y		2.08		2.42		2.67				2.4
110	Mercury	E2	ug/dscm	y		3.35		4.32		4.70				4.1
111	Antimony	E2	ug/dscm	y		3.99		3.88		3.47				3.8
112	Barium	E2	ug/dscm	y		0.07		0.03		0.55				0.2
113	Lead	E2	ug/dscm	y	nd	2.16	nd	2.10	nd	2.06			100	2.1
114	Silver	E2	ug/dscm	y	nd	1.08	nd	1.05	nd	1.03			100	1.1
115	Thallium	E2	ug/dscm	y	nd	6.47	nd	6.30	nd	6.17			100	6.3
116	Nickel	E2	ug/dscm	y		1.48		1.58		3.16				2.1
117	Selenium	E2	ug/dscm	y	nd	6.47	nd	6.30	nd	6.17			100	6.3
118	SVM	E2	ug/dscm	y	100	2.37	78.8	2.66	81	2.54			86	2.5
119	LVM	E2	ug/dscm	y	36	3.27	32.3	3.57	34	4.05			34	3.6
120														
121	**3019C3**	**Trial Burn**				R1		R2		R3		R4		Cond Avg
122														
123	POHC DRE	Methylene Chloride												
124	POHC Feedrate		lb/hr			552.8		552.85		552.54				
125	Emission Rate	E1	lb/hr		nd	6.80E-03	nd	6.70E-03	nd	6.70E-03				
126	DRE	E1	%			99.9988		99.9988		99.9988				
127														
128	Sampling Train	DRE	E1											
129	Stack Gas Flowrate		dscfm			6403		6357		6355				6372
130	O2		%			6.2		6.2		6.2				6
131	Moisture		%											
132	Temperature		°F											

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	**Feedstream**																								
2																									
3																									
4	**3019C1**	**Trial burn**			R1		R2		R3		R4		Cond Avg		R1		R2		R3		R4		Cond Avg		R1
5																									
6	Feedstream Number				F1		F1		F1		F1		F1		F2		F2		F2		F2		F2		F3
7	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Spike		Spike		Spike		Spike		Spike		Misc. Fuel
8	Feed Class 2				HW		HW		HW		HW		HW		Spike		Spike		Spike		Spike		Spike		MF
9	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste		Liq waste		Spike		Spike		Spike		Spike		Spike		Kerosene
10	Feed Rate		lb/hr		4,765.0		4751		4668		4829		4753.3		548		547		547		548		547.5		
11	Feed Rate		gpm																						1.5
12	Thermal Feedrate		MM Btu/hr																						
13	Heating Value		Btu/lb		789.0		942		756		1010		874.3												
14	Density		g/ml		1.024		1.01		1.014		1.049				1		1		1		1				0.965
15	Viscosity		cSt		1.208		1.227		1.193		1.219														
16	Ash		%		3.8		3.7		3.78		3.38		3.7												0.022
17	Chlorine		lb/hr		125		125		123.8		118.6		123.0		449.9		449.9		448.9		449.9		449.7		
18																									
19	Stack Gas Flowrate		dscfm		6649		6681		6999		6549		6720		6649		6681		6999		6549		6720		6649
20	Oxygen		%		6		6		6		6		6		6		6		6		6		6		6
21																									
22	Thermal Feedrate		MMBtu/hr		3.8		4.5		3.5		4.9		4.2												
23	Estimated Firing Rate		MMBtu/hr		32.3		32.3		32.3		32.3		32.3												
24																									
25	*Feedrate MTEC Calculations*																								
26	Ash		mg/dscm		6575.0		6610.1		6376.3		6261.2		6455.6												5.9
27	Chlorine		ug/dscm		4.59E+06		4.70E+06		4.47E+06		4.55E+06		4578013.9		1.66E+07		1.69E+07		1.62E+07		1.73E+07		16738012.8		
28																									
29	**3019C2**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3
30																									
31	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F2		F3		F3		F3
32	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Spike		Spike		Spike		Spike		Misc. Fuel		Misc. Fuel		Misc. Fuel
33	Feed Class 2				HW		HW		HW		HW		Spike		Spike		Spike		Spike		MF		MF		MF
34	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste		Spike		Spike		Spike		Spike		Kerosene		Kerosene		Kerosene
35	Feed Rate		lb/hr		5,547.0		5609		5499		5551.7		628		628.0		628		628.0						
36	Feed Rate		gpm																		0.7		0.7		0.7
37	Thermal Feedrate		MM Btu/hr																						
38	Heating Value		Btu/lb		1125.0		976		1138		1079.7														
39	Density		g/ml		1.017		1.019		1.027				1		1		1				0.965		0.965		0.965
40	Viscosity		cSt		1.366		1.368		1.275																
41	Ash		%		3.5		3.6		3.47		3.5									nd	0.005	nd	0.005	nd	0.005
42	Chlorine		lb/hr		125		125		123.8		124.5		471		470.9		469.9		470.6						
43	Mercury		lb/hr		1.96E-05		2.15E-05		1.71E-05				1.98E-04		1.98E-04		1.98E-04		1.9824E-04						
44	Silver		lb/hr		7.09E-04		7.16E-05		7.50E-05																
45	Arsenic		lb/hr		1.47E-03		1.32E-03		5.35E-04				3.30E-04		3.30E-04		3.30E-04		3.30E-04						
46	Barium		lb/hr		9.27E-05		8.81E-05		8.57E-05																
47	Beryllium		lb/hr		5.45E-06		5.50E-06		1.07E-05																
48	Cadmium		lb/hr		1.09E-05		1.10E-05		2.14E-05																
49	Chromium		lb/hr		1.31E-03		1.32E-03		1.45E-03																
50	Nickel		lb/hr		8.18E-04		7.71E-04		9.10E-04																
51	Lead		lb/hr		1.64E-03		3.25E-04		1.39E-03																
52	Antimony		lb/hr		1.64E-04		1.65E-04		3.21E-04																
53	Selenium		lb/hr		0.00032726		3.30E-04		6.43E-04																
54	Thallium		lb/hr		0.00032726		3.30E-04		6.43E-04																
55	Chromium (Hex)		lb/hr										0.00903084		0.00900881		0.00903084		9.02E-03						
56																									
57	Stack Gas Flowrate		dscfm		6437		6363		6502		6434		6437		6363		6502		6434		6437		6363		6502
58	Oxygen		%		5		5		5		5		5		5		5		5		5		5		5
59																									
60	Thermal Feedrate		MMBtu/hr		6.2		5.5		6.3		6.0														

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	**Feedstream**																		
2																			
3																			
4	**3019C1**		R2		R3		R4		Cond Avg		R1		R2		R3		R4		Cond Avg
5																			
6	Feedstream Number		F3		F3		F3		F3		F4		F4		F4		F4		F4
7	Feed Class		Misc. Fuel		Misc. Fuel		Misc. Fuel		Misc. Fuel		Total		Total		Total		Total		Total
8	Feed Class 2		MF		MF		MF		MF		Total		Total		Total		Total		Total
9	Feedstream Description		Kerosene		Kerosene		Kerosene		Kerosene		Total		Total		Total		Total		Total
10	Feed Rate										5313.0		5298.0		5215.0		5377.0		5300.8
11	Feed Rate		1.5		1.5		1.6		1.5		1.5		1.5		1.5		1.6		1.5
12	Thermal Feedrate																		
13	Heating Value																		
14	Density		0.965		0.965		1												
15	Viscosity																		
16	Ash		0.022		0.022		0.022		0.022		3.8		3.7		3.8		3.4		3.7
17	Chlorine										574.6		574.9		572.7		568.5		572.7
18																			
19	Stack Gas Flowrate		6681		6999		6549		6720										
20	Oxygen		6		6		6		6										
21																			
22	Thermal Feedrate										3.8		4.5		3.5		4.9		4.2
23	Estimated Firing Rate										32.3		32.3		32.3		32.3		32.3
24																			
25	*Feedrate MTEC Calculations*																		
26	Ash		6.0		5.8		6.8		6.1		6580.8		6616.0		6382.1		6268.0		6461.7
27	Chlorine										21142875.9		21617764.0		20695488.3		21807978.6		21316026.7
28																			
29	**3019C2**		Cond Avg		R1		R2		R3		Cond Avg								
30																			
31	Feedstream Number		F3		F4		F4		F4		F4								
32	Feed Class		Misc. Fuel		Total		Total		Total		Total								
33	Feed Class 2		MF		Total		Total		Total		Total								
34	Feedstream Description		Kerosene		Total		Total		Total		Total								
35	Feed Rate				6.2E+03		6.2E+03		6.1E+03		6.2E+03								
36	Feed Rate		0.7		0.70		0.70		0.70		0.70								
37	Thermal Feedrate																		
38	Heating Value																		
39	Density																		
40	Viscosity																		
41	Ash																		
42	Chlorine																		
43	Mercury																		
44	Silver																		
45	Arsenic																		
46	Barium																		
47	Beryllium																		
48	Cadmium																		
49	Chromium																		
50	Nickel																		
51	Lead																		
52	Antimony																		
53	Selenium																		
54	Thallium																		
55	Chromium (Hex)																		
56																			
57	Stack Gas Flowrate		6434																
58	Oxygen		5																
59																			
60	Thermal Feedrate				6.2		5.5		6.3		6.0								

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
61	Estimated Firing Rate		MMBtu/hr		33.5		32.7		32.6		33.0														
62																									
63	*Feedrate MTEC Calculations*																								
64	Ash		mg/dscm		6923.4		7312.2		6952.7		7062.8									nd	0.6	nd	0.6	nd	0.6
65	Chlorine		ug/dscm		4.42E+06		4.54E+06		4.51E+06		4490585.0		1.67E+07		1.71E+07		1.71E+07		16973050.1						
66	Mercury		ug/dscm		6.96E-01		7.80E-01		6.24E-01		0.7		7.03E+00		7.20E+00		7.22E+00		7.2						
67	Silver		ug/dscm		2.51E+01		2.60E+00		2.73E+00		10.2														
68	Arsenic		ug/dscm		5.22E+01		4.80E+01		1.95E+01		39.9		1.17E+01		1.20E+01		1.20E+01		11.9						
69	Barium		ug/dscm		3.29E+00		3.20E+00		3.12E+00		3.2														
70	Beryllium		ug/dscm	nd	1.93E-01	nd	2.00E-01	nd	3.90E-01		0.3														
71	Cadmium		ug/dscm	nd	3.87E-01	nd	4.00E-01	nd	7.80E-01		0.5														
72	Chromium		ug/dscm		4.64E+01		4.80E+01		5.27E+01		49.0														
73	Nickel		ug/dscm		2.90E+01		2.80E+01		3.32E+01		30.1														
74	Lead		ug/dscm		5.80E+01		1.18E+01		5.07E+01		40.2														
75	Antimony		ug/dscm	nd	5.80E+00	nd	6.00E+00	nd	1.17E+01		7.8														
76	Selenium		ug/dscm	nd	1.16E+01	nd	1.20E+01	nd	2.34E+01		15.7														
77	Thallium		ug/dscm	nd	1.16E+01	nd	1.20E+01	nd	2.34E+01		15.7														
78	Chromium (Hex)		ug/dscm										3.20E+02		3.19E+02		3.20E+02		320.0						
79	SVM		ug/dscm		58.21		11.99		51.12		4.0E+01														
80	LVM		ug/dscm		98.73		96.04		72.38		8.6E+01		331.93		331.44		332.26		331.9						
81																									
82																									
83	**3019C3**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3
84																									
85	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F2		F3		F3		F3
86	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Spike		Spike		Spike		Spike		Misc. Fuel		Misc. Fuel		Misc. Fuel
87	Feed Class 2				HW		HW		HW		HW		Spike		Spike		Spike		Spike		MF		MF		MF
88	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste		Spike		Spike		Spike		Spike		Kerosene		Kerosene		Kerosene
89	Feed Rate		lb/hr		4636		4631		4627		4631.3		547.6		547.85		547.81		547.8						
90	Feed Rate		gpm																		1.2		1.3		1.3
91	Thermal Feedrate		MM Btu/hr																						
92	Heating Value		Btu/lb		1288.0		1224		1387		1299.7														
93	Density		g/ml		1.007		1.006		1.005				1		1		1				0.965		0.965		0.965
94	Viscosity		cSt		1.471		1.468		1.486																
95	Ash		%		3.8		3.9		3.82		3.8										0.038		0.038		0.038
96	Chlorine		lb/hr		116		117		118.6		117.2		457.0		457		457		457.0						
97																									
98	Stack Gas Flowrate		dscfm		6437		6363		6502		6434		6437		6363		6502		6434		6437		6363		6502
99	Oxygen		%		5		5		5		5		5		5		5		5		5		5		5
100																									
101	Thermal Feedrate		MMBtu/hr		6.0		6.0		6.0		6.0														
102	Estimated Firing Rate		MMBtu/hr		33.5		33.5		33.5		33.5														
103																									
104	*Feedrate MTEC Calculations*																								
105	Ash		mg/dscm		6230		6559		6440		6410										7.8		8.7		8.7
106	Chlorine		ug/dscm		4113172		4248691		4321424		4227762		16204478		16595314		16651691		16483828						

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
61	Estimated Firing Rate				33.5		32.7		32.6		33.0								
62																			
63	*Feedrate MTEC Calculations*																		
64	Ash		0.6		6924.0		7312.8		6953.3		7063.4								
65	Chlorine				21119009		21639272		21632624		21463635								
66	Mercury				7.7		8.0		7.8		7.9								
67	Silver				25.1		2.6		2.7		10.2								
68	Arsenic				63.9		60.0		31.5		51.8								
69	Barium				3.3		3.2		3.1		3.2								
70	Beryllium				0.1		0.2		0.4		0.3								
71	Cadmium				0.2		0.2		0.4		0.5								
72	Chromium				46.4		48.0		52.7		49.0								
73	Nickel				29.0		28.0		33.2		30.1								
74	Lead				58.0		11.8		50.7		40.2								
75	Antimony				2.9		3.0		5.9		7.8								
76	Selenium				5.8		6.0		11.7		15.7								
77	Thallium				5.8		6.0		11.7		15.7								
78	Chromium (Hex)				320.2		319.4		320.2		320.0								
79	SVM				58.2		12.0		51.1		40.4								
80	LVM				430.7		427.5		404.6		417.4								
81																			
82																			
83	**3019C3**		Cond Avg		R1		R2		R3		Cond Avg								
84																			
85	Feedstream Number		F3		F4		F4		F4		F4								
86	Feed Class		Misc. Fuel		Total		Total		Total		Total								
87	Feed Class 2		MF		Total		Total		Total		Total								
88	Feedstream Description		Kerosene		Total		Total		Total		Total								
89	Feed Rate				5183.64		5178.85		5174.81		5179.1								
90	Feed Rate		1.3																
91	Thermal Feedrate																		
92	Heating Value																		
93	Density																		
94	Viscosity																		
95	Ash		0.0																
96	Chlorine				573		574		575.6		574.2								
97																			
98	Stack Gas Flowrate		6434																
99	Oxygen		5																
100																			
101	Thermal Feedrate				6.0		6.0		6.0		6.0								
102	Estimated Firing Rate				33.5		33.5		33.5		33.5								
103																			
104	*Feedrate MTEC Calculations*																		
105	Ash		8.4		6238.0		6567.2		6449.0		6418.1								
106	Chlorine				20317650		20844004		20973115		20711590								

	B	C	D	E	F	G	H
1	**Process Information**						
2							
3	**3019C1 Trial burn**			R1	R2	R3	R4
4							
5	Combustion Chamber Temp (min)	^{o}F		1977	1985	1985	1981
6	Quench Tank pH	pH		8.6	8.1	8.3	7.7
7	Quench Blowdown Rate	gpm		42.4	39.3	36.3	40.3
8	Venturi Press. Drop	in W.C		85.00	86	86	86
9	Incinerator Press.	psig		-0.1	-0.1	-0.1	-0.1
10							
11	**3019C2 Trial burn**			R1	R2	R3	
12							
13	Combustion Chamber Temp (min)	^{o}F		2097.0	2097	2092	
14	Quench Tank pH	pH		7.30	7.5	7.7	
15	Quench Blowdown Rate	gpm		29.3	36.4	34.8	
16	Venturi Press. Drop	in W.C		86	86	84.8	
17	Incinerator Press.	psig		-0.2	-0.2	-0.2	
18							
19	**3019C3 Trial burn**			R1	R2	R3	
20							
21	Combustion Chamber Temp (min)	^{o}F		1991.0	1995	1993	
22	Quench Tank pH	pH		7.80	8	7.8	
23	Quench Blowdown Rate	gpm		38.7	41.6	41.1	
24	Venturi Press. Drop	in W.C		85.6	86	86	
25	Incinerator Press.	psig		-0.6	-0.5	-0.4	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	**PCDD/PCDF**																		
2	N																		
3	Facility Name and ID:		Squibb Manufacturing, Inc.																
4	Condition ID:		3019C1																
5	Condition/Test Date:		Trial burn, min oper temp cond																
6																			
7			I-TEF			Run 1					Run 2					Run 3			
8			Wght Fact		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ	
9					Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND	
10	Detected in sample volume (pg)																		
11		2,3,7,8-TCDD	1	nd	4	4	2	2	nd	6	6	3	3	nd	5	5	3	3	nd
12		Total TCDD	0		41.0	0.00	41.00	0.00		63.0	0.00	63.00	0.00		39.0	0.00	39.00	0.00	
13		1,2,3,7,8-PCDD	0.5	nd	3.8	1.90	1.90	0.95	nd	3.8	1.90	1.90	0.95	nd	3.1	1.55	1.55	0.78	nd
14		Total PCDD	0		11.0	0.00	11.00	0.00		9.6	0.00	9.60	0.00		18.0	0.00	18.00	0.00	
15		1,2,3,4,7,8-HxCDD	0.1	nd	6.3	0.63	3.15	0.32	nd	4.6	0.46	2.30	0.23	nd	4.5	0.45	2.25	0.23	nd
16		1,2,3,6,7,8-HxCDD	0.1	nd	5.1	0.51	2.55	0.26	nd	3.8	0.38	1.90	0.19	nd	3.7	0.37	1.85	0.19	nd
17		1,2,3,7,8,9-HxCDD	0.1	nd	5.0	0.50	2.50	0.25	nd	3.7	0.37	1.85	0.19	nd	3.6	0.36	1.80	0.18	nd
18		Total HxCDD	0		9.5	0.00	9.50	0.00		12.0	0.00	12.00	0.00		8.7	0.00	8.70	0.00	
19		1,2,3,4,6,7,8-HpCDD	0.01		14.0	0.14	14.00	0.14		14.0	0.14	14.00	0.14		9.6	0.10	9.60	0.10	
20		Total HpCDD	0		22.0	0.00	22.00	0.00		14.0	0.00	14.00	0.00		9.6	0.00	9.60	0.00	
21		OCDD	0.001		21.0	0.02	21.00	0.02		35.0	0.04	35.00	0.04		19.0	0.02	19.00	0.02	
22		2,3,7,8-TCDF	0.1	nd	5.4	0.54	2.70	0.27	nd	3.9	0.39	1.95	0.20		4.0	0.40	4.00	0.40	nd
23		Total TCDF	0		270.0	0.00	270.00	0.00		190.0	0.00	190.00	0.00		220.0	0.00	220.00	0.00	
24		1,2,3,7,8-PCDF	0.05	nd	6.6	0.33	3.30	0.17	nd	6.9	0.35	3.45	0.17	nd	7.2	0.36	3.60	0.18	nd
25		2,3,4,7,8-PCDF	0.5	nd	8.8	4.40	4.40	2.20		8.7	4.35	8.70	4.35		11.0	5.50	11.00	5.50	
26		Total PCDF	0		46.0	0.00	46.00	0.00		78.0	0.00	78.00	0.00		68.0	0.00	68.00	0.00	
27		1,2,3,4,7,8-HxCDF	0.1		9.1	0.91	9.10	0.91		14.0	1.40	14.00	1.40		9.7	0.97	9.70	0.97	
28		1,2,3,6,7,8-HxCDF	0.1		7.0	0.70	7.00	0.70		8.8	0.88	8.80	0.88		6.7	0.67	6.70	0.67	
29		2,3,4,6,7,8-HxCDF	0.1		7.5	0.75	7.50	0.75		17.0	1.70	17.00	1.70		8.4	0.84	8.40	0.84	
30		1,2,3,7,8,9-HxCDF	0.1	nd	4.5	0.45	2.25	0.23	nd	3.1	0.31	1.55	0.16	nd	3.1	0.31	1.55	0.16	nd
31		Total HxCDF	0		55.0	0.00	55.00	0.00		83.0	0.00	83.00	0.00		52.0	0.00	52.00	0.00	
32		1,2,3,4,6,7,8-HpCDF	0.01		17.0	0.17	17.00	0.17		53.0	0.53	53.00	0.53		21.0	0.21	21.00	0.21	
33		1,2,3,4,7,8,9-HpCDF	0.01	nd	3.2	0.03	1.60	0.02		6.3	0.06	6.30	0.06	nd	1.8	0.02	0.90	0.01	
34		Total HpCDF	0		17.0	0.00	17.00	0.00		77.0	0.00	77.00	0.00		21.0	0.00	21.00	0.00	
35		OCDF	0.001		13.0	0.01	13.00	0.01		33.0	0.03	33.00	0.03		15.0	0.02	15.00	0.02	
36																			
37		Gas sample volume (dscf)				129.42	129.42	129.42			127.36	127.36	127.36			126.97	126.97	126.97	
38		O2 (%)				5.70	5.70	5.70			6.10	6.10	6.10			6.20	6.20	6.20	
39																			
40		PCDD/PCDF (ng in sample)				0.0163	0.5055	0.0095			0.0192	0.5946	0.0142			0.0172	0.4703	0.0130	
41		PCDD/PCDF (ng/dscm @ 7% O2)		83.4		0.0041	0.1263	0.0024	52.4		0.0050	0.1550	0.0037	49.4		0.0045	0.1238	0.0034	53.1
42																			
43		TEQ Cond Avg	0.0031																
44		Total Cond Avg	0.1312																

	A	B	T	U	V	W
1		**PCDD/PCDF**				
2		N				
3		Facility Name and ID:				
4		Condition ID:				
5		Condition/Test Date:				
6						
7				Run 4		
8			Total	TEQ	Total	TEQ
9			Full ND	Full ND	1/2 ND	1/2 ND
10		Detected in sample volume				
11		2,3,7,8-TCDD	4	4	2	2
12		Total TCDD	41.0	0.00	41.00	0.00
13		1,2,3,7,8-PCDD	3.0	1.50	1.50	0.75
14		Total PCDD	6.9	0.00	6.90	0.00
15		1,2,3,4,7,8-HxCDD	4.3	0.43	2.15	0.22
16		1,2,3,6,7,8-HxCDD	3.5	0.35	1.75	0.18
17		1,2,3,7,8,9-HxCDD	3.4	0.34	1.70	0.17
18		Total HxCDD	7.1	0.00	7.10	0.00
19		1,2,3,4,6,7,8-HpCDD	9.4	0.09	9.40	0.09
20		Total HpCDD	14.0	0.00	14.00	0.00
21		OCDD	23.0	0.02	23.00	0.02
22		2,3,7,8-TCDF	2.9	0.29	1.45	0.15
23		Total TCDF	130.0	0.00	130.00	0.00
24		1,2,3,7,8-PCDF	4.9	0.25	2.45	0.12
25		2,3,4,7,8-PCDF	5.5	2.75	5.50	2.75
26		Total PCDF	56.0	0.00	56.00	0.00
27		1,2,3,4,7,8-HxCDF	10.0	1.00	10.00	1.00
28		1,2,3,6,7,8-HxCDF	7.9	0.79	7.90	0.79
29		2,3,4,6,7,8-HxCDF	13.0	1.30	13.00	1.30
30		1,2,3,7,8,9-HxCDF	3.8	0.38	1.90	0.19
31		Total HxCDF	65.0	0.00	65.00	0.00
32		1,2,3,4,6,7,8-HpCDF	43.0	0.43	43.00	0.43
33		1,2,3,4,7,8,9-HpCDF	5.3	0.05	5.30	0.05
34		Total HpCDF	64.0	0.00	64.00	0.00
35		OCDF	36.0	0.04	36.00	0.04
36						
37		Gas sample volume (dsc		122.98	122.98	122.98
38		O2 (%)		6.10	6.10	6.10
39						
40		PCDD/PCDF (ng in sam		0.0138	0.4430	0.0101
41		PCDD/PCDF (ng/dscm @		0.0037	0.1196	0.0027
42						
43		TEQ Cond Avg				
44		Total Cond Avg				

PCDD/PCDF

N

Facility Name and ID: Squibb Manufacturing, Inc.

Condition ID: 3019C2

Condition/Test Date: Trial burn, elevated oper temp cond

	I-TEF Wght Fact		Run 1 Total Full ND	Run 1 TEQ Full ND	Run 1 Total 1/2 ND	Run 1 TEQ 1/2 ND		Run 2 Total Full ND	Run 2 TEQ Full ND	Run 2 Total 1/2 ND	Run 2 TEQ 1/2 ND		Run 3 Total Full ND	Run 3 TEQ Full ND	Run 3 Total 1/2 ND	Run 3 TEQ 1/2 ND
Detected in sample volume (pg)																
2,3,7,8-TCDD	1	nd	5.60	5.60	2.80	2.80	nd	6.00	6.00	3.00	3.00	nd	7.20	7.20	3.60	3.60
Total TCDD	0		49.00	0.00	49.00	0.00		53.00	0.00	53.00	0.00		55.00	0.00	55.00	0.00
1,2,3,7,8-PCDD	0.5	nd	5.80	2.90	2.90	1.45	nd	3.80	1.90	1.90	0.95	nd	5.00	2.50	2.50	1.25
Total PCDD	0		8.60	0.00	8.60	0.00		8.00	0.00	8.00	0.00		12.00	0.00	12.00	0.00
1,2,3,4,7,8-HxCDD	0.1	nd	5.20	0.52	2.60	0.26	nd	4.40	0.44	2.20	0.22	nd	4.90	0.49	2.45	0.25
1,2,3,6,7,8-HxCDD	0.1	nd	4.20	0.42	2.10	0.21	nd	3.60	0.36	1.80	0.18	nd	4.00	0.40	2.00	0.20
1,2,3,7,8,9-HxCDD	0.1	nd	4.10	0.41	2.05	0.21	nd	3.50	0.35	1.75	0.18	nd	3.90	0.39	1.95	0.20
Total HxCDD	0	nd	5.20	0.00	2.60	0.00	nd	5.10	0.00	2.55	0.00	nd	4.90	0.00	2.45	0.00
1,2,3,4,6,7,8-HpCDD	0.01	nd	4.50	0.05	2.25	0.02	nd	3.50	0.04	1.75	0.02	nd	3.60	0.04	1.80	0.02
Total HpCDD	0	nd	4.50	0.00	2.25	0.00		5.00	0.00	5.00	0.00	nd	3.60	0.00	1.80	0.00
OCDD	0.001	nd	10.00	0.01	5.00	0.01		21.00	0.02	21.00	0.02		10.00	0.01	10.00	0.01
2,3,7,8-TCDF	0.1	nd	5.70	0.57	2.85	0.29	nd	6.30	0.63	3.15	0.32		13.00	1.30	13.00	1.30
Total TCDF	0		330.00	0.00	330.00	0.00		530.00	0.00	530.00	0.00		640.00	0.00	640.00	0.00
1,2,3,7,8-PCDF	0.05	nd	4.90	0.25	2.45	0.12	nd	4.30	0.22	2.15	0.11		12.00	0.60	12.00	0.60
2,3,4,7,8-PCDF	0.5	nd	5.60	2.80	2.80	1.40	nd	9.80	4.90	4.90	2.45		11.00	5.50	11.00	5.50
Total PCDF	0		110.00	0.00	110.00	0.00		150.00	0.00	150.00	0.00		250.00	0.00	250.00	0.00
1,2,3,4,7,8-HxCDF	0.1	nd	6.40	0.64	3.20	0.32		12.00	1.20	12.00	1.20		12.00	1.20	12.00	1.20
1,2,3,6,7,8-HxCDF	0.1	nd	4.40	0.44	2.20	0.22		8.80	0.88	8.80	0.88		7.60	0.76	7.60	0.76
2,3,4,6,7,8-HxCDF	0.1	nd	4.30	0.43	2.15	0.22		11.00	1.10	11.00	1.10		6.50	0.65	6.50	0.65
1,2,3,7,8,9-HxCDF	0.1	nd	6.70	0.67	3.35	0.34	nd	3.10	0.31	1.55	0.16	nd	3.90	0.39	1.95	0.20
Total HxCDF	0		14.00	0.00	14.00	0.00		74.00	0.00	74.00	0.00		70.00	0.00	70.00	0.00
1,2,3,4,6,7,8-HpCDF	0.01		12.00	0.12	12.00	0.12		38.00	0.38	38.00	0.38		17.00	0.17	17.00	0.17
1,2,3,4,7,8,9-HpCDF	0.01	nd	2.30	0.02	1.15	0.01	nd	6.10	0.06	3.05	0.03	nd	2.10	0.02	1.05	0.01
Total HpCDF	0		12.00	0.00	12.00	0.00		38.00	0.00	38.00	0.00		17.00	0.00	17.00	0.00
OCDF	0.001	nd	6.60	0.01	3.30	0.00		18.00	0.02	18.00	0.02		11.00	0.01	11.00	0.01
Gas sample volume (dscf)				126.02	126.02	126.02			129.63	129.63	129.63			130.84	130.84	130.84
O2 (%)				4.60	4.60	4.60			4.80	4.80	4.80			5.20	5.20	5.20
PCDD/PCDF (ng in sample)				0.0158	0.5368	0.0080			0.0188	0.8996	0.0112			0.0216	1.0693	0.0159
PCDD/PCDF (ng/dscm @ 7% O2)	99.2			0.0038	0.1285	0.0019	80.9		0.0044	0.2119	0.0026	52.8		0.0052	0.2559	0.0038

TEQ Cond Avg 0.0028

Total Cond Avg 0.1988