

A Surrogate Fuel for Kerosene

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- Preferred colloquium topic: Laminar Flames.
- Keywords: Kerosene, surrogate, modeling, chemical kinetic mechanism

Thirty-Second International Symposium on Combustion

Mc Gill University,

Montreal, Canada

August 3-8, 2008.

n-decane/trimethylbenzene mechanism

(available in the download section of

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Number	Reaction	A	n	E	
1.1 H ₂ /O ₂ Reaktionen					
1f	H + O ₂ → OH + O	9.756E+13	0.00	62.1	
2f	O + H ₂ → OH + H	5.119E+04	2.67	26.3	
3f	OH + H ₂ → H ₂ O + H	1.024E+08	1.60	13.8	
4f	2OH → H ₂ O + O	1.506E+09	1.14	0.42	
1.2 HO ₂ Reaktionen					
5f	H + O ₂ + M' → HO ₂ + M'	3.535E+18	-0.80	0	
6f	HO ₂ + H → 2OH	1.686E+14	0.00	3.66	
7f	HO ₂ + H → H ₂ + O ₂	4.276E+13	0.00	5.9	
8f	HO ₂ + OH → H ₂ O + O ₂	2.891E+13	0.00	-2.1	
9f	HO ₂ + H → H ₂ O + O	3.011E+13	0.00	7.2	
10f	HO ₂ + O → OH + O ₂	3.192E+13	0.00	0	
1.3 H ₂ O ₂ Reaktionen					
11f	2HO ₂ → H ₂ O ₂ + O ₂	5.200E+12	0.00	6.44	
12f	H ₂ O ₂ + H → H ₂ O + OH	1.024E+13	0.00	15	
13f	H ₂ O ₂ + H → HO ₂ + H ₂	1.686E+12	0.00	15.7	
14f	H ₂ O ₂ + O → OH + HO ₂	6.624E+11	0.00	16.6	
15f	H ₂ O ₂ + OH → H ₂ O + HO ₂	3.938E+12	0.00	5.57	
16f	H ₂ O ₂ + M' → 2OH + M'	k_0	1.908E+26	-2.07	219
		k_∞	2.494E+20	-1.68	219
1.4 Rekombinationsreaktionen					
17f	2H + M' → H ₂ + M'	1.865E+18	-1.00	0	

Number	Reaction	A	n	E	
18f	$\text{H} + \text{OH} + \text{M}' \rightarrow \text{H}_2\text{O} + \text{M}'$	2.212E+22	-2.00	0	
19f	$2\text{O} + \text{M}' \rightarrow \text{O}_2 + \text{M}'$	2.857E+17	-1.00	0	
2. CO/CO ₂ Reaktionen					
20f	$\text{CO} + \text{OH} \rightarrow \text{CO}_2 + \text{H}$	8.970E+06	1.50	-3.1	
21f	$\text{CO} + \text{HO}_2 \rightarrow \text{CO}_2 + \text{OH}$	1.510E+14	0.00	98.9	
22f	$\text{CO} + \text{O} + \text{M}' \rightarrow \text{CO}_2 + \text{M}'$	k_0	1.350E+24	-2.79	17.5
		k_∞	1.800E+10	0.00	9.96
23f	$\text{CO} + \text{O}_2 \rightarrow \text{CO}_2 + \text{O}$	2.510E+12	0.00	200	
24f	$\text{CH} + \text{O} \rightarrow \text{CO} + \text{H}$	4.000E+13	0.00	0	
24a1f	$\text{CH} + \text{OH} \rightarrow \text{HCO} + \text{H}$	5.700E+12	0.00	-3.2	
25f	$\text{CH} + \text{O}_2 \rightarrow \text{HCO} + \text{O}$	7.500E+13	0.00	0	
26f	$\text{CH} + \text{CO}_2 \rightarrow \text{HCO} + \text{CO}$	1.900E+14	0.00	66.1	
27a1f	$\text{CH} + \text{}_3\text{-CH}_2 \rightarrow \text{C}_2\text{H}_2 + \text{H}$	4.000E+13	0.00	0	
27a2f	$\text{CH} + \text{CH}_3 \rightarrow \text{C}_2\text{H}_3 + \text{H}$	3.000E+13	0.00	0	
1.021 C Reactions					
28f	$\text{HCO} + \text{M}' \rightarrow \text{CO} + \text{H} + \text{M}'$	7.000E+14	0.00	70.3	
29f	$\text{HCO} + \text{H} \rightarrow \text{CO} + \text{H}_2$	9.033E+13	0.00	0	
30f	$\text{HCO} + \text{O} \rightarrow \text{CO} + \text{OH}$	3.011E+13	0.00	0	
31f	$\text{HCO} + \text{O} \rightarrow \text{CO}_2 + \text{H}$	3.011E+13	0.00	0	
32f	$\text{HCO} + \text{OH} \rightarrow \text{CO} + \text{H}_2\text{O}$	1.024E+15	0.00	0	

Number	Reaction	A	n	E
33f	$\text{HCO} + \text{O}_2 \rightarrow \text{CO} + \text{HO}_2$	3.011E+12	0.00	0
34f	$2\text{HCO} \rightarrow \text{CH}_2\text{O} + \text{CO}$	3.011E+13	0.00	0
3.3.b 3-CH ₂ Reaktionen				
35f	$\text{CH} + \text{H}_2 \rightarrow \text{H} + \text{}_3\text{-CH}_2$	1.110E+08	1.79	7
35a1f	$\text{}_3\text{-CH}_2 + \text{H}_2 \rightarrow \text{H} + \text{CH}_3$	5.000E+05	2.00	30.3
36yf	$\text{}_3\text{-CH}_2 + \text{O} \rightarrow \text{CO} + \text{H}_2$	4.818E+13	0.00	0
36	$\text{}_3\text{-CH}_2 + \text{O} \rightarrow \text{CO} + 2\text{H}$	7.227E+12	0.00	0
37xf	$\text{}_3\text{-CH}_2 + \text{OH} \rightarrow \text{CH} + \text{H}_2\text{O}$	1.130E+07	2.00	12.6
37yf	$\text{}_3\text{-CH}_2 + \text{OH} \rightarrow \text{CH}_2\text{O} + \text{H}$	2.000E+13	0.00	0
ak40f	$2\text{}_3\text{-CH}_2 \rightarrow \text{C}_2\text{H}_2 + 2\text{H}$	1.200E+14	0.00	3.34
41f	$\text{}_3\text{-CH}_2 + \text{CH}_3 \rightarrow \text{C}_2\text{H}_4 + \text{H}$	4.215E+13	0.00	0
37	$\text{}_3\text{-CH}_2 + \text{O}_2 \rightarrow \text{CO} + \text{OH} + \text{H}$	1.300E+13	0.00	6.2
38	$\text{}_3\text{-CH}_2 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2$	1.200E+13	0.00	6.2
3.4.b 1-CH ₂ Reaktionen				
42f	$\text{}_1\text{-CH}_2 + \text{M}' \rightarrow \text{}_3\text{-CH}_2 + \text{M}'$	1.500E+13	0.00	0
43f	$\text{}_1\text{-CH}_2 + \text{H}_2 \rightarrow \text{CH}_3 + \text{H}$	7.227E+13	0.00	0
44	$\text{}_1\text{-CH}_2 + \text{O}_2 \rightarrow \text{CO} + \text{OH} + \text{H}$	3.130E+13	0.00	0
44a2f	$\text{}_1\text{-CH}_2 + \text{C}_2\text{H}_4 \rightarrow \text{C}_3\text{H}_6$	9.635E+13	0.00	0
44a3f	$\text{}_1\text{-CH}_2 + \text{CO}_2 \rightarrow \text{CO} + \text{CH}_2\text{O}$	1.400E+13	0.00	0
44a5f	$\text{}_1\text{-CH}_2 + \text{CH}_4 \rightarrow 2\text{CH}_3$	1.600E+13	0.00	-2.4
44a7f	$\text{H} + \text{}_1\text{-CH}_2 \rightarrow \text{CH} + \text{H}_2$	3.000E+13	0.00	0
44a8f	$\text{OH} + \text{}_1\text{-CH}_2 \rightarrow \text{H} + \text{CH}_2\text{O}$	3.000E+13	0.00	0

Number	Reaction	A	n	E	
3.5.b CH ₂ O Reaktionen					
45	CH ₂ O + H → HCO + H ₂	1.260E+08	1.62	9.06	
46	CH ₂ O + OH → HCO + H ₂ O	3.433E+09	1.18	-1.9	
47	CH ₂ O + M' → HCO + H + M'	1.620E+36	-5.54	405	
50f	CH ₂ O + O ₂ → HCO + HO ₂	6.022E+13	0.00	170	
3.6.b CH ₃ Reaktionen					
48f	2CH ₃ → C ₂ H ₅ + H	3.160E+13	0.00	61.4	
49	2CH ₃ → C ₂ H ₆	k_0	1.272E+41	-7.00	11.6
		k_∞	1.813E+13	0.00	0
60mbo	2CH ₃ → C ₂ H ₄ + H ₂	1.000E+14	0.00	134	
52mbo	CH ₃ + M' → ₃ -CH ₂ + H + M'	1.024E+16	0.00	379	
51f	CH ₃ + O → CH ₂ O + H	8.430E+13	0.00	0	
52f	CH ₃ + OH → CH ₂ OH + H	2.640E+19	-1.80	33.8	
54xf	OH + CH ₃ → ₃ -CH ₂ + H ₂ O	5.600E+07	1.60	22.7	
54yf	OH + CH ₃ → ₁ -CH ₂ + H ₂ O	2.500E+13	0.00	0	
55f	CH ₃ + OH → CH ₃ O + H	5.740E+12	-0.23	58.3	
56f	CH ₃ + HO ₂ → CH ₃ O + OH	3.780E+13	0.00	0	
59xf	CH ₃ + HO ₂ → CH ₄ + O ₂	1.000E+12	0.00	0	
58f	CH ₃ + O ₂ → CH ₂ O + OH	3.300E+11	0.00	37.4	
59f	CH ₃ + H → CH ₄	k_0	6.257E+23	-1.80	0
		k_∞	2.108E+14	0.00	0
3.7.b CH ₃ O Reaktionen					
63	CH ₃ O + M' → CH ₂ O + H + M'	5.420E+13	0.00	56.5	
64f	CH ₃ O + H → CH ₂ O + H ₂	1.800E+13	0.00	0	
65f	CH ₃ O + O ₂ → CH ₂ O + HO ₂	2.167E+10	0.00	7.3	

Number	Reaction	A	n	E	
66f	$\text{CH}_3\text{O} + \text{O} \rightarrow \text{CH}_3 + \text{O}_2$	1.500E+13	0.00	0	
67f	$\text{CH}_3\text{O} + \text{O} \rightarrow \text{CH}_2\text{O} + \text{OH}$	1.400E+12	0.00	0	
3.8.b CH_3O Reaktionen					
68	$\text{CH}_2\text{OH} + \text{M}' \rightarrow \text{CH}_2\text{O} + \text{H} + \text{M}'$	5.000E+13	0.00	105	
69	$\text{CH}_2\text{OH} + \text{H} \rightarrow \text{CH}_2\text{O} + \text{H}_2$	3.000E+13	0.00	0	
70f	$\text{CH}_2\text{OH} + \text{O}_2 \rightarrow \text{CH}_2\text{O} + \text{HO}_2$	1.000E+13	0.00	30	
3.9.b CH_4 Reaktionen					
71f	$\text{CH}_4 + \text{H} \rightarrow \text{CH}_3 + \text{H}_2$	1.300E+04	3.00	33.6	
72f	$\text{CH}_4 + \text{O} \rightarrow \text{CH}_3 + \text{OH}$	7.227E+08	1.56	35.5	
73f	$\text{CH}_4 + \text{OH} \rightarrow \text{CH}_3 + \text{H}_2\text{O}$	1.560E+07	1.83	11.6	
74f	$\text{CH}_4 + \text{HO}_2 \rightarrow \text{CH}_3 + \text{H}_2\text{O}_2$	9.030E+12	0.00	103	
76f	$\text{CH}_4 + \text{}_3\text{-CH}_2 \rightarrow 2\text{CH}_3$	1.300E+13	0.00	39.9	
77f	$\text{CH}_4 + \text{CH} \rightarrow \text{C}_2\text{H}_4 + \text{H}$	3.000E+13	0.00	-1.7	
4.1 CH_3OH Reaktionen					
90f	$\text{OH} + \text{CH}_3 \rightarrow \text{CH}_3\text{OH}$	k_0	1.596E+44	-8.20	0
		k_∞	6.022E+13	0.00	0
91mbof	$\text{CH}_3\text{OH} + \text{H} \rightarrow \text{CH}_2\text{OH} + \text{H}_2$	4.000E+13	0.00	25.5	
91af	$\text{CH}_3\text{OH} + \text{H} \rightarrow \text{CH}_3\text{O} + \text{H}_2$	4.000E+12	0.00	25.5	
92mbof	$\text{CH}_3\text{OH} + \text{O} \rightarrow \text{CH}_2\text{OH} + \text{OH}$	1.000E+13	0.00	19.6	
93mbof	$\text{CH}_3\text{OH} + \text{OH} \rightarrow \text{CH}_2\text{OH} + \text{H}_2\text{O}$	3.550E+04	2.65	-3.7	
96mbof	$\text{CH}_3\text{OH} + \text{CH}_3 \rightarrow \text{CH}_4 + \text{CH}_2\text{OH}$	9.000E+12	0.00	41.1	
97mbof	$\text{CH}_3\text{OH} + \text{HO}_2 \rightarrow \text{CH}_2\text{OH} + \text{H}_2\text{O}_2$	6.200E+12	0.00	81.1	

Number	Reaction	A	n	E	
4.2 C ₂ H/HCCO Reaktionen					
91f	C ₂ H + O → CO + CH	1.024E+13	0.00	0	
92f	C ₂ H + O ₂ → HCCO + O	1.800E+13	0.00	0	
93f	HCCO + H → ₁ -CH ₂ + CO	1.500E+14	0.00	0	
94	HCCO + O → 2CO + H	1.000E+14	0.00	0	
95f	HCCO + O ₂ → HCO + CO ₂	8.130E+11	0.00	3.58	
96f	HCCO + O ₂ → 2CO + OH	8.130E+11	0.00	3.58	
4.3 C ₂ H ₂ Reaktionen					
97f	₂₃ -CH ₂ → C ₂ H ₂ + H ₂	1.204E+13	0.00	3.34	
98f	C ₂ H ₂ + O ₂ → HCCO + OH	2.000E+08	1.50	126	
ak98	C ₂ H ₂ + O ₂ → C ₂ H + HO ₂	1.200E+13	0.00	312	
99f	C ₂ H ₂ + H → C ₂ H + H ₂	6.620E+13	0.00	116	
ak100f	C ₂ H ₂ + OH → C ₂ H + H ₂ O	3.380E+07	2.00	58.5	
101f	C ₂ H ₂ + O → ₃ -CH ₂ + CO	2.168E+06	2.10	6.57	
102f	C ₂ H ₂ + O → HCCO + H	5.059E+06	2.10	6.57	
103	CH ₂ CO + M' → ₃ -CH ₂ + CO + M'	1.000E+16	0.00	248	
104f	CH ₂ CO + H → CH ₃ + CO	4.200E+13	0.00	16.1	
105f	CH ₂ CO + O → HCO + CHO	2.300E+12	0.00	2.9	
106f	CH ₂ CO + OH → CH ₂ O + HCO	1.000E+13	0.00	0	
107f	C ₂ H ₃ → C ₂ H ₂ + H	k_0 k_∞	4.153E+41 2.000E+14	-7.50 0.00	190 166
108f	C ₂ H ₃ + H → C ₂ H ₂ + H ₂	1.200E+13	0.00	0	

Number	Reaction	A	n	E
109f	$C_2H_3 + O \rightarrow C_2H_2 + OH$	1.000E+13	0.00	0
ak110f	$C_2H_3 + OH \rightarrow C_2H_2 + H_2O$	2.000E+13	0.00	0
111f	$C_2H_3 + O \rightarrow CH_3 + CO$	1.000E+13	0.00	0
112f	$C_2H_3 + O \rightarrow HCO + {}_3\text{-}CH_2$	1.000E+13	0.00	0
ak125f	$C_2H_3 + O_2 \rightarrow CH_2O + HCO$	1.700E+29	-5.31	27.2
ak126f	$C_2H_3 + O_2 \rightarrow CH_2CHO + O$	3.500E+14	-0.61	22
ak1271f	$C_2H_3 + O_2 \rightarrow C_2H_2 + HO_2$	5.190E+15	-1.26	13.8
ak1272f	$C_2H_3 + O_2 \rightarrow C_2H_2 + HO_2$	2.120E-06	6.00	39.6
121f	$CH_3CO \rightarrow CH_3 + CO$	2.320E+26	-5.00	75.1
122f	$CH_3CO + H \rightarrow CH_2CO + H_2$	2.000E+13	0.00	0
123f	$CH_3CO + CH_3 \rightarrow C_2H_6 + CO$	5.000E+13	0.00	0
124	$CH_3CHO + M' \rightarrow CH_3 + HCO + M'$	7.000E+15	0.00	343
125f	$CH_3CHO + H \rightarrow CH_3CO + H_2$	2.100E+09	1.16	10.1
126f	$CH_3CHO + H \rightarrow CH_2CHO + H_2$	2.000E+09	1.16	10.1
127f	$CH_3CHO + O \rightarrow CH_3CO + OH$	5.000E+12	0.00	7.6
128f	$CH_3CHO + O \rightarrow CH_2CHO + OH$	8.000E+11	0.00	7.6
129f	$CH_3CHO + OH \rightarrow CH_3CO + H_2O$	2.300E+10	0.73	-4.7
130f	$CH_3CHO + HO_2 \rightarrow CH_3CO + H_2O_2$	3.000E+12	0.00	50
131f	$CH_3CHO + O_2 \rightarrow CH_3CO + HO_2$	4.000E+13	0.00	164
132f	$CH_3CHO + {}_3\text{-}CH_2 \rightarrow CH_3CO + CH_3$	2.500E+12	0.00	15.9

Number	Reaction	A	n	E	
133f	$\text{CH}_3\text{CHO} + \text{CH}_3 \rightarrow \text{CH}_3\text{CO} + \text{CH}_4$	2.000E-06	5.54	10.3	
ak134f	$\text{C}_2\text{H}_4 + \text{M}' \rightarrow \text{C}_2\text{H}_2 + \text{H}_2 + \text{M}'$	3.500E+16	0.00	299	
135	$\text{C}_2\text{H}_4 + \text{M}' \rightarrow \text{C}_2\text{H}_3 + \text{H} + \text{M}'$	7.300E+17	0.00	404	
136f	$\text{C}_2\text{H}_4 + \text{H} \rightarrow \text{C}_2\text{H}_3 + \text{H}_2$	5.400E+14	0.00	62.4	
137f	$\text{C}_2\text{H}_4 + \text{OH} \rightarrow \text{C}_2\text{H}_3 + \text{H}_2\text{O}$	3.000E+13	0.00	12.6	
139f	$\text{C}_2\text{H}_4 + \text{O} \rightarrow \text{CH}_3 + \text{HCO}$	1.355E+07	1.88	0.748	
44a4f	${}_1\text{-CH}_2 + \text{CH}_3 \rightarrow \text{H} + \text{C}_2\text{H}_4$	1.200E+13	0.00	-2.4	
a140	$\text{C}_2\text{H}_5 \rightarrow \text{C}_2\text{H}_4 + \text{H}$	k_0	1.000E+17	0.00	140
		k_∞	8.200E+13	0.00	167
b140	$\text{C}_2\text{H}_4 + \text{H} \rightarrow \text{C}_2\text{H}_5$	k_0	4.715E+18	0.00	3.16
		k_∞	3.975E+09	1.28	5.4
141f	$\text{C}_2\text{H}_5 + \text{CH}_3 \rightarrow \text{C}_2\text{H}_4 + \text{CH}_4$	1.140E+12	0.00	0	
143f	$\text{C}_2\text{H}_5 + \text{O}_2 \rightarrow \text{C}_2\text{H}_4 + \text{HO}_2$	1.024E+10	0.00	-9.15	
146f	$\text{C}_2\text{H}_5 + \text{O} \rightarrow \text{CH}_2\text{O} + \text{CH}_3$	6.624E+13	0.00	0	
147f	$\text{C}_2\text{H}_6 + \text{H} \rightarrow \text{C}_2\text{H}_5 + \text{H}_2$	1.400E+09	1.50	31.1	
148f	$\text{C}_2\text{H}_6 + \text{O} \rightarrow \text{C}_2\text{H}_5 + \text{OH}$	1.000E+09	1.50	24.4	
149f	$\text{C}_2\text{H}_6 + \text{OH} \rightarrow \text{C}_2\text{H}_5 + \text{H}_2\text{O}$	7.200E+06	2.00	3.6	
150f	$\text{C}_2\text{H}_6 + \text{CH}_3 \rightarrow \text{C}_2\text{H}_5 + \text{CH}_4$	1.500E-07	6.00	25.4	
151f	$\text{C}_2\text{H}_6 + \text{HO}_2 \rightarrow \text{C}_2\text{H}_5 + \text{H}_2\text{O}_2$	1.700E+13	0.00	85.9	
152f	$\text{C}_2\text{H}_6 + \text{O}_2 \rightarrow \text{C}_2\text{H}_5 + \text{HO}_2$	6.000E+13	0.00	217	
153f	$\text{C}_2\text{H}_6 + {}_3\text{-CH}_2 \rightarrow \text{C}_2\text{H}_5 + \text{CH}_3$	2.200E+13	0.00	36.3	

Number	Reaction	A	n	E
154f	$C_2H_2 + CH \rightarrow C_3H_3$	3.000E+13	0.00	0
166f	$C_2H_2 + {}_1\text{-}CH_2 \rightarrow C_3H_3 + H$	1.800E+14	0.00	0
167f	$C_2H_2 + {}_3\text{-}CH_2 \rightarrow C_3H_3 + H$	1.200E+13	0.00	27.6
168f	$C_2H_2 + HCCO \rightarrow C_3H_3 + CO$	1.000E+11	0.00	12.5
ak169f	$C_3H_3 + O \rightarrow CH_2O + C_2H$	2.000E+13	0.00	0
gb170f	$C_3H_3 + O \rightarrow C_2H_2 + CO + H$	1.400E+14	0.00	0
gb171f	$C_3H_3 + {}_3\text{-}CH_2 \rightarrow C_4H_4 + H$	4.000E+13	0.00	0
gb172	$C_3H_3 + CH_3 \rightarrow C_2H_5 + C_2H$	1.000E+13	0.00	157
170f	$C_3H_3 + O_2 \rightarrow HCO + CH_2CO$	3.010E+10	0.00	12
ak170f	$C_3H_3 + O \rightarrow C_2H_3 + CO$	3.800E+13	0.00	0
ak171f	$C_3H_3 + CH \rightarrow U\text{-}C_4H_3 + H$	7.000E+13	0.00	0
ak147	$C_3H_4 + M' \rightarrow C_3H_3 + H + M'$	2.000E+18	0.00	334
ak148f	$C_3H_4 + H \rightarrow C_3H_3 + H_2$	2.000E+07	2.00	20.9
ak149f	$C_3H_4 + CH_3 \rightarrow C_3H_3 + CH_4$	2.000E+11	0.00	32.2
ak153f	$C_3H_4 + OH \rightarrow C_3H_3 + H_2O$	2.000E+07	2.00	4.18
ak197f	$C_3H_4 + H \rightarrow C_3H_5$	2.000E+12	0.00	11.3
ak155f	$C_3H_4 \rightarrow P\text{-}C_3H_4$	1.200E+15	0.00	386
ak157f	$P\text{-}C_3H_4 + H \rightarrow C_2H_2 + CH_3$	1.300E+05	2.50	4.18
ak164f	$P\text{-}C_3H_4 + OH \rightarrow C_3H_3 + H_2O$	2.000E+07	2.00	4.18
ak165f	$P\text{-}C_3H_4 + CH_3 \rightarrow C_3H_3 + CH_4$	1.500E+00	3.50	23.4

Number	Reaction	A	n	E
ak198f	$\text{C}_3\text{H}_5 + \text{H} \rightarrow \text{C}_3\text{H}_4 + \text{H}_2$	3.330E+12	0.00	0
a199f	$\text{C}_3\text{H}_5 + \text{O}_2 \rightarrow \text{C}_3\text{H}_4 + \text{HO}_2$	6.000E+11	0.00	41.9
200	$\text{C}_3\text{H}_6 \rightarrow \text{C}_2\text{H}_3 + \text{CH}_3$	3.150E+15	0.00	359
202f	$\text{C}_3\text{H}_6 + \text{H} \rightarrow \text{C}_3\text{H}_5 + \text{H}_2$	5.000E+12	0.00	6.3
203f	$\text{C}_3\text{H}_6 + \text{OH} \rightarrow \text{C}_3\text{H}_5 + \text{H}_2\text{O}$	4.000E+12	0.00	0
204f	$\text{C}_3\text{H}_6 + \text{CH}_3 \rightarrow \text{C}_3\text{H}_5 + \text{CH}_4$	8.960E+12	0.00	35.6
206f	$\text{C}_3\text{H}_6 + \text{O} \rightarrow \text{C}_2\text{H}_4 + \text{CH}_2\text{O}$	5.900E+13	0.00	21
207f	$\text{C}_3\text{H}_6 + \text{O} \rightarrow \text{C}_2\text{H}_5 + \text{HCO}$	3.600E+12	0.00	0
209f	$\text{C}_3\text{H}_6 + \text{OH} \rightarrow \text{C}_2\text{H}_5 + \text{CH}_2\text{O}$	7.900E+12	0.00	0
211f	$\text{N-C}_3\text{H}_7 \rightarrow \text{CH}_3 + \text{C}_2\text{H}_4$	9.600E+13	0.00	130
212f	$\text{N-C}_3\text{H}_7 \rightarrow \text{H} + \text{C}_3\text{H}_6$	1.250E+14	0.00	155
213f	$\text{N-C}_3\text{H}_7 + \text{O}_2 \rightarrow \text{C}_3\text{H}_6 + \text{HO}_2$	1.000E+12	0.00	20.9
214f	$\text{I-C}_3\text{H}_7 \rightarrow \text{C}_3\text{H}_6 + \text{H}$	6.300E+13	0.00	154
215f	$\text{I-C}_3\text{H}_7 \rightarrow \text{C}_2\text{H}_4 + \text{CH}_3$	2.000E+10	0.00	124
216f	$\text{I-C}_3\text{H}_7 + \text{O}_2 \rightarrow \text{C}_3\text{H}_6 + \text{HO}_2$	1.000E+12	0.00	20.9
217f	$\text{C}_2\text{H}_5 + \text{CH}_3 \rightarrow \text{C}_3\text{H}_8$	7.000E+12	0.00	0
218f	$\text{C}_3\text{H}_8 + \text{H} \rightarrow \text{I-C}_3\text{H}_7 + \text{H}_2$	1.000E+14	0.00	34.9
219f	$\text{C}_3\text{H}_8 + \text{H} \rightarrow \text{N-C}_3\text{H}_7 + \text{H}_2$	1.300E+14	0.00	40.6
220f	$\text{C}_3\text{H}_8 + \text{O} \rightarrow \text{I-C}_3\text{H}_7 + \text{OH}$	2.600E+13	0.00	18.7
221f	$\text{C}_3\text{H}_8 + \text{O} \rightarrow \text{N-C}_3\text{H}_7 + \text{OH}$	3.000E+13	0.00	24.1

Number	Reaction	A	n	E
222f	$\text{C}_3\text{H}_8 + \text{OH} \rightarrow \text{I-C}_3\text{H}_7 + \text{H}_2\text{O}$	2.800E+12	0.00	3.6
223f	$\text{C}_3\text{H}_8 + \text{OH} \rightarrow \text{N-C}_3\text{H}_7 + \text{H}_2\text{O}$	3.700E+12	0.00	6.9
224	$\text{C}_3\text{H}_8 + \text{HO}_2 \rightarrow \text{I-C}_3\text{H}_7 + \text{H}_2\text{O}_2$	2.000E+12	0.00	71.2
225	$\text{I-C}_3\text{H}_7 + \text{H}_2\text{O}_2 \rightarrow \text{C}_3\text{H}_8 + \text{HO}_2$	4.160E+11	0.00	31.1
226	$\text{C}_3\text{H}_8 + \text{HO}_2 \rightarrow \text{N-C}_3\text{H}_7 + \text{H}_2\text{O}_2$	1.700E+13	0.00	85.7
227	$\text{N-C}_3\text{H}_7 + \text{H}_2\text{O}_2 \rightarrow \text{C}_3\text{H}_8 + \text{HO}_2$	2.330E+12	0.00	41.1
228	$\text{C}_3\text{H}_8 + \text{CH}_3 \rightarrow \text{CH}_4 + \text{I-C}_3\text{H}_7$	1.300E+12	0.00	48.6
229	$\text{I-C}_3\text{H}_7 + \text{CH}_4 \rightarrow \text{CH}_3 + \text{C}_3\text{H}_8$	1.010E+13	0.00	77.7
230	$\text{CH}_3 + \text{C}_3\text{H}_8 \rightarrow \text{CH}_4 + \text{N-C}_3\text{H}_7$	4.000E+11	0.00	39.8
231	$\text{N-C}_3\text{H}_7 + \text{CH}_4 \rightarrow \text{CH}_3 + \text{C}_3\text{H}_8$	3.120E+12	0.00	68.9
232	$\text{C}_3\text{H}_8 + \text{O}_2 \rightarrow \text{I-C}_3\text{H}_7 + \text{HO}_2$	4.000E+13	0.00	199
233	$\text{I-C}_3\text{H}_7 + \text{HO}_2 \rightarrow \text{C}_3\text{H}_8 + \text{O}_2$	2.080E+12	0.00	0
234	$\text{C}_3\text{H}_8 + \text{O}_2 \rightarrow \text{N-C}_3\text{H}_7 + \text{HO}_2$	4.000E+13	0.00	199
235	$\text{N-C}_3\text{H}_7 + \text{HO}_2 \rightarrow \text{C}_3\text{H}_8 + \text{O}_2$	2.080E+12	0.00	0
236	$\text{C}_3\text{H}_8 + \text{CH}_3\text{O} \rightarrow \text{N-C}_3\text{H}_7 + \text{CH}_3\text{OH}$	3.000E+11	0.00	29.3
237	$\text{N-C}_3\text{H}_7 + \text{CH}_3\text{OH} \rightarrow \text{C}_3\text{H}_8 + \text{CH}_3\text{O}$	1.220E+10	0.00	38.5
238	$\text{C}_3\text{H}_8 + \text{CH}_3\text{O} \rightarrow \text{I-C}_3\text{H}_7 + \text{CH}_3\text{OH}$	3.000E+11	0.00	29.3
239	$\text{I-C}_3\text{H}_7 + \text{CH}_3\text{OH} \rightarrow \text{C}_3\text{H}_8 + \text{CH}_3\text{O}$	1.220E+10	0.00	38.5
245f	$\text{C}_2\text{H}_2 + \text{C}_2\text{H} \rightarrow \text{C}_4\text{H}_2 + \text{H}$	3.000E+13	0.00	0
246f	$\text{C}_4\text{H}_2 + \text{OH} \rightarrow \text{C}_2\text{H}_2 + \text{HCCO}$	1.500E+13	0.00	0
247f	$\text{C}_2\text{H}_2 + \text{C}_2\text{H} \rightarrow \text{U-C}_4\text{H}_3$	1.200E+12	0.00	0
248	$2\text{C}_2\text{H}_2 \rightarrow \text{U-C}_4\text{H}_3 + \text{H}$	2.000E+13	0.00	226
249f	$\text{U-C}_4\text{H}_3 + \text{M}' \rightarrow \text{C}_4\text{H}_2 + \text{H} + \text{M}'$	1.000E+16	0.00	250
250f	$\text{S-C}_4\text{H}_3 + \text{M}' \rightarrow \text{C}_4\text{H}_2 + \text{H} + \text{M}'$	1.000E+16	0.00	250
251f	$\text{U-C}_4\text{H}_3 + \text{H} \rightarrow \text{C}_4\text{H}_2 + \text{H}_2$	2.000E+13	0.00	0
252f	$\text{S-C}_4\text{H}_3 + \text{H} \rightarrow \text{C}_4\text{H}_2 + \text{H}_2$	2.000E+13	0.00	0
253	$\text{U-C}_4\text{H}_3 + \text{O}_2 \rightarrow \text{C}_2\text{H} + 2\text{HCO}$	1.000E+12	0.00	8.4
254	$\text{S-C}_4\text{H}_3 + \text{O}_2 \rightarrow \text{C}_2\text{H} + \text{CH}_2\text{O} + \text{CO}$	1.000E+12	0.00	8.4

Number	Reaction	A	n	E
255f	$C_2H_2 + C_2H_3 \rightarrow C_4H_4 + H$	1.600E+13	0.00	105
256f	$U-C_4H_3 + H + M' \rightarrow C_4H_4 + M'$	1.000E+15	0.00	0
257f	$S-C_4H_3 + H + M' \rightarrow C_4H_4 + M'$	1.000E+15	0.00	0
258f	$C_4H_4 + H \rightarrow U-C_4H_3 + H_2$	1.500E+14	0.00	42.7
259f	$C_4H_4 + H \rightarrow S-C_4H_3 + H_2$	1.500E+14	0.00	42.7
260f	$C_4H_4 + OH \rightarrow U-C_4H_3 + H_2O$	7.000E+13	0.00	12.6
261f	$C_4H_4 + OH \rightarrow S-C_4H_3 + H_2O$	7.000E+13	0.00	12.6
262f	$C_4H_4 + C_2H \rightarrow U-C_4H_3 + C_2H_2$	4.000E+13	0.00	0
263f	$C_4H_4 + C_2H \rightarrow S-C_4H_3 + C_2H_2$	4.000E+13	0.00	0
264f	$C_4H_4 + C_2H \rightarrow C_4H_2 + C_2H_3$	1.000E+13	0.00	0
266f	$C_2H_2 + C_2H_3 \rightarrow U-C_4H_5$	1.200E+12	0.00	0
267f	$C_4H_4 + H \rightarrow S-C_4H_5$	5.500E+12	0.00	10
268f	$C_4H_4 + H \rightarrow U-C_4H_5$	5.500E+12	0.00	10
269f	$S-C_4H_5 + H \rightarrow C_4H_4 + H_2$	2.000E+13	0.00	0
270f	$U-C_4H_5 + H \rightarrow C_4H_4 + H_2$	2.000E+13	0.00	0
271f	$U-C_4H_5 + M5 \rightarrow S-C_4H_5 + M5$	1.000E+14	0.00	0
272	$U-C_4H_5 + O_2 \rightarrow C_2H_3 + 2HCO$	1.000E+12	0.00	8.4
273	$S-C_4H_5 + O_2 \rightarrow C_2H_3 + CO + CH_2O$	1.000E+12	0.00	8.4
274	$C_4H_6 \rightarrow 2C_2H_3$	4.030E+19	-1.00	411
275f	$C_2H_3 + C_2H_4 \rightarrow C_4H_6 + H$	1.000E+11	0.00	30.5
mm275	$C_3H_3 + CH_3 \rightarrow C_4H_6$	2.000E+12	0.00	0

Number	Reaction	A	n	E
mm276	$C_4H_6 \rightarrow C_3H_3 + CH_3$	1.000E+12	0.00	249
276f	$C_4H_6 + H \rightarrow U-C_4H_5 + H_2$	3.000E+07	2.00	54.4
277f	$C_4H_6 + H \rightarrow S-C_4H_5 + H_2$	3.000E+07	2.00	25.1
278f	$C_4H_6 + OH \rightarrow U-C_4H_5 + H_2O$	2.000E+07	2.00	20.9
279f	$C_4H_6 + OH \rightarrow S-C_4H_5 + H_2O$	2.000E+07	2.00	8.4
280f	$C_4H_6 + O \rightarrow C_2H_4 + CH_2CO$	1.000E+12	0.00	0
281f	$C_4H_6 + O \rightarrow CH_2O + C_3H_4$	1.000E+12	0.00	0
282f	$C_4H_6 + OH \rightarrow C_2H_5 + CH_2CO$	1.000E+12	0.00	0
283f	$C_4H_6 + OH \rightarrow CH_2O + C_3H_5$	2.000E+12	0.00	0
284f	$C_4H_6 + OH \rightarrow C_2H_3 + CH_3CHO$	5.000E+12	0.00	0
285f	$C_4H_7 \rightarrow C_4H_6 + H$	1.200E+14	0.00	206
286f	$C_4H_7 \rightarrow C_2H_4 + C_2H_3$	1.000E+11	0.00	155
287f	$H + C_4H_7 \rightarrow C_4H_6 + H_2$	3.160E+12	0.00	0
288f	$C_4H_7 + O_2 \rightarrow C_4H_6 + HO_2$	1.000E+11	0.00	0
289f	$2C_4H_7 \rightarrow C_4H_6 + {}_1-C_4H_8$	3.160E+12	0.00	0
290f	$C_4H_7 + CH_3 \rightarrow C_4H_6 + CH_4$	1.000E+13	0.00	0
291f	$C_4H_7 + C_2H_3 \rightarrow C_4H_6 + C_2H_4$	4.000E+12	0.00	0
292f	$C_4H_7 + C_2H_5 \rightarrow C_4H_6 + C_2H_6$	4.000E+12	0.00	0
293f	$C_4H_7 + C_2H_5 \rightarrow {}_1-C_4H_8 + C_2H_4$	5.000E+11	0.00	0
296f	$C_4H_7 + C_3H_5 \rightarrow C_4H_6 + C_3H_6$	4.000E+13	0.00	0

Number	Reaction	<i>A</i>	<i>n</i>	<i>E</i>
299f	$\text{C}_3\text{H}_5 + \text{CH}_3 \rightarrow \text{}_1\text{-C}_4\text{H}_8$	1.000E+13	0.00	0
300	$\text{}_1\text{-C}_4\text{H}_8 \rightarrow \text{C}_2\text{H}_3 + \text{C}_2\text{H}_5$	2.000E+18	-1.00	405
301	$\text{}_1\text{-C}_4\text{H}_8 \rightarrow \text{H} + \text{C}_4\text{H}_7$	4.110E+18	-1.00	408
302f	$\text{}_1\text{-C}_4\text{H}_8 + \text{H} \rightarrow \text{C}_4\text{H}_7 + \text{H}_2$	5.000E+13	0.00	16.3
303f	$\text{}_1\text{-C}_4\text{H}_8 + \text{O} \rightarrow \text{CH}_3\text{CHO} + \text{C}_2\text{H}_4$	2.505E+12	0.00	0
304f	$\text{}_1\text{-C}_4\text{H}_8 + \text{O} \rightarrow \text{CH}_3 + \text{C}_2\text{H}_5 + \text{CO}$	1.625E+13	0.00	3.6
305f	$\text{}_1\text{-C}_4\text{H}_8 + \text{O} \rightarrow \text{C}_3\text{H}_6 + \text{CH}_2\text{O}$	7.230E+05	2.30	-4.4
306f	$\text{}_1\text{-C}_4\text{H}_8 + \text{O} \rightarrow \text{C}_4\text{H}_7 + \text{OH}$	1.300E+13	0.00	18.8
307f	$\text{}_1\text{-C}_4\text{H}_8 + \text{OH} \rightarrow \text{CH}_3\text{CHO} + \text{C}_2\text{H}_5$	1.000E+11	0.00	0
308f	$\text{}_1\text{-C}_4\text{H}_8 + \text{OH} \rightarrow \text{CH}_3 + \text{C}_2\text{H}_6 + \text{CO}$	1.000E+10	0.00	0
309f	$\text{}_1\text{-C}_4\text{H}_8 + \text{OH} \rightarrow \text{N-C}_3\text{H}_7 + \text{CH}_2\text{O}$	6.500E+12	0.00	0
310f	$\text{}_1\text{-C}_4\text{H}_8 + \text{OH} \rightarrow \text{C}_4\text{H}_7 + \text{H}_2\text{O}$	1.750E+13	0.00	29.1
311f	$\text{}_1\text{-C}_4\text{H}_8 + \text{CH}_3 \rightarrow \text{C}_4\text{H}_7 + \text{CH}_4$	1.000E+11	0.00	30.6
312	$\text{}_1\text{-C}_4\text{H}_8 + \text{O}_2 \rightarrow \text{C}_4\text{H}_7 + \text{HO}_2$	4.000E+12	0.00	167
313f	$\text{}_1\text{-C}_4\text{H}_8 + \text{HO}_2 \rightarrow \text{C}_4\text{H}_7 + \text{H}_2\text{O}_2$	1.000E+11	0.00	71.4
314f	$\text{}_1\text{-C}_4\text{H}_8 + \text{C}_2\text{H}_5 \rightarrow \text{C}_4\text{H}_7 + \text{C}_2\text{H}_6$	1.000E+11	0.00	33.5
315	$\text{}_1\text{-C}_4\text{H}_8 + \text{C}_3\text{H}_5 \rightarrow \text{C}_4\text{H}_7 + \text{C}_3\text{H}_6$	8.000E+10	0.00	51.9
336f	$\text{P-C}_4\text{H}_9 \rightarrow \text{C}_2\text{H}_5 + \text{C}_2\text{H}_4$	2.500E+13	0.00	121
337f	$\text{P-C}_4\text{H}_9 \rightarrow \text{}_1\text{-C}_4\text{H}_8 + \text{H}$	1.260E+13	0.00	162
338f	$\text{P-C}_4\text{H}_9 + \text{O}_2 \rightarrow \text{}_1\text{-C}_4\text{H}_8 + \text{HO}_2$	1.000E+12	0.00	8.4
a327	$\text{C}_5\text{H}_9 \rightarrow \text{C}_3\text{H}_5 + \text{C}_2\text{H}_4$	2.500E+13	0.00	126

Number	Reaction	A	n	E
a329	$C_5H_9 \rightarrow C_2H_3 + C_3H_6$	2.500E+13	0.00	126
a331f	$1-C_5H_{10} \rightarrow C_2H_5 + C_3H_5$	3.160E+16	0.00	339
a333	$1-C_5H_{10} + H \rightarrow C_5H_9 + H_2$	2.800E+13	0.00	16.8
m335	$1-C_5H_{10} + O \rightarrow C_5H_9 + OH$	2.540E+05	2.60	-4.7
m341	$1-C_5H_{10} + OH \rightarrow C_5H_9 + H_2O$	6.800E+13	0.00	12.8
a347	$1-C_5H_{10} + CH_3 \rightarrow C_5H_9 + CH_4$	1.000E+11	0.00	30.6
a349	$1-C_5H_{11} \rightarrow C_2H_4 + N-C_3H_7$	2.500E+13	0.00	120
a355	$1-C_6H_{12} \rightarrow N-C_3H_7 + C_3H_5$	3.160E+16	0.00	339
a359	$1-C_6H_{12} + H \rightarrow C_4H_7 + C_2H_4 + H_2$	2.800E+07	2.00	32.2
a361	$1-C_6H_{12} + H \rightarrow C_3H_5 + C_3H_6 + H_2$	8.000E+06	2.00	20.9
a363	$1-C_6H_{12} + H \rightarrow 1-C_4H_8 + C_2H_3 + H_2$	8.000E+06	2.00	20.9
a369	$1-C_6H_{12} + O \rightarrow C_4H_7 + C_2H_4 + OH$	5.000E+13	0.00	32.9
a371	$1-C_6H_{12} + O \rightarrow C_3H_5 + C_3H_6 + OH$	2.800E+13	0.00	21.8
a373	$1-C_6H_{12} + O \rightarrow 1-C_4H_8 + C_2H_3 + OH$	2.800E+13	0.00	21.8
a379	$1-C_6H_{12} + OH \rightarrow C_4H_7 + C_2H_4 + H_2O$	4.300E+09	1.10	7.6
a381	$1-C_6H_{12} + OH \rightarrow C_3H_5 + C_3H_6 + H_2O$	1.300E+09	1.30	2.9
a383	$1-C_6H_{12} + OH \rightarrow 1-C_4H_8 + C_2H_3 + H_2O$	1.300E+09	1.30	2.9
444	$1-C_6H_{13} \rightarrow P-C_4H_9 + C_2H_4$	2.500E+13	0.00	120
c395	$1-C_7H_{14} \rightarrow P-C_4H_9 + C_3H_5$	3.160E+16	0.00	339
c424	$1-C_7H_{14} + H \rightarrow 3C_2H_4 + CH_3$	7.200E+12	2.00	12.1
c425	$1-C_7H_{14} + H \rightarrow C_3H_6 + C_2H_5 + C_2H_4$	7.200E+12	1.30	5.43
d424	$1-C_7H_{14} + H \rightarrow C_2H_4 + C_4H_6 + H_2 + CH_3$	5.800E+04	2.50	1.21
dd425	$1-C_7H_{14} + OH \rightarrow C_2H_4 + C_4H_6 + H_2O + CH_3$	3.000E+06	2.00	-6.3
ac424	$1-C_7H_{14} + HO_2 \rightarrow H_2O_2 + C_2H_4 + C_4H_6 + CH_3$	6.400E+03	2.60	51.8
ca425	$1-C_7H_{14} + C_2H_5 \rightarrow C_2H_6 + C_2H_4 + C_4H_6 + CH_3$	1.400E+00	3.50	18.1
cd424	$1-C_7H_{14} + O \rightarrow OH + C_2H_4 + C_4H_6 + CH_3$	9.200E+10	0.70	16
456	$1-C_7H_{15} \rightarrow 1-C_5H_{11} + C_2H_4$	2.000E+13	0.00	120
a456	$1-C_7H_{15} + O_2 \rightarrow 1-C_7H_{14} + HO_2$	3.200E+12	0.00	20.9
c456	$1-C_7H_{15} \rightarrow 1-C_5H_{10} + C_2H_5$	4.000E+13	0.00	120
d456	$1-C_7H_{15} \rightarrow 1-C_4H_8 + N-C_3H_7$	2.000E+13	0.00	120
cc456	$1-C_7H_{15} \rightarrow 1-C_6H_{12} + CH_3$	2.000E+13	0.00	130
ca456	$1-C_7H_{15} \rightarrow P-C_4H_9 + C_3H_6$	2.000E+13	0.00	120
481	$2-C_{10}H_{21} \rightarrow 1-C_7H_{15} + C_3H_6$	1.500E+13	0.00	118
482	$3-C_{10}H_{21} \rightarrow 1-C_6H_{13} + 1-C_4H_8$	1.500E+13	0.00	118
496	$N-C_{10}H_{22} \rightarrow 2_1-C_5H_{11}$	3.200E+16	0.00	339
497	$N-C_{10}H_{22} \rightarrow P-C_4H_9 + 1-C_6H_{13}$	3.100E+16	0.00	353
498	$N-C_{10}H_{22} \rightarrow N-C_3H_7 + 1-C_7H_{15}$	3.100E+16	0.00	353

Number	Reaction	A	n	E
500	$\text{N-C}_{10}\text{H}_{22} + \text{O}_2 \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{HO}_2$	3.000E+14	0.00	199
501	$\text{N-C}_{10}\text{H}_{22} + \text{O}_2 \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{HO}_2$	3.000E+14	0.00	199
505	$\text{N-C}_{10}\text{H}_{22} + \text{OH} \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{H}_2\text{O}$	1.300E+07	2.00	-3.2
506	$\text{N-C}_{10}\text{H}_{22} + \text{OH} \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{H}_2\text{O}$	1.300E+07	2.00	-3.2
515	$\text{N-C}_{10}\text{H}_{22} + \text{HO}_2 \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{H}_2\text{O}_2$	4.000E+13	0.00	71.2
516	$\text{N-C}_{10}\text{H}_{22} + \text{HO}_2 \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{H}_2\text{O}_2$	4.000E+13	0.00	71.2
520	$\text{N-C}_{10}\text{H}_{22} + \text{CH}_3 \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{CH}_4$	1.000E+12	0.00	40.1
521	$\text{N-C}_{10}\text{H}_{22} + \text{CH}_3 \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{CH}_4$	1.000E+12	0.00	40.1
525	$\text{N-C}_{10}\text{H}_{22} + \text{H} \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{H}_2$	4.500E+07	2.00	20.9
526	$\text{N-C}_{10}\text{H}_{22} + \text{H} \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{H}_2$	4.500E+07	2.00	20.9
527	$\text{N-C}_{10}\text{H}_{22} + \text{O} \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{OH}$	3.250E+13	0.00	21.8
528	$\text{N-C}_{10}\text{H}_{22} + \text{O} \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{OH}$	3.250E+13	0.00	21.8
529	$2\text{-C}_{10}\text{H}_{21} \rightarrow 3\text{-C}_{10}\text{H}_{21}$	2.000E+11	0.00	75.8
530	$3\text{-C}_{10}\text{H}_{21} \rightarrow 2\text{-C}_{10}\text{H}_{21}$	2.000E+11	0.00	75.8
120	$2\text{-C}_{10}\text{H}_{21} + \text{O}_2 \rightarrow 2\text{-RO}_2$	4.000E+12	0.00	0
121	$2\text{-RO}_2 \rightarrow 2\text{-C}_{10}\text{H}_{21} + \text{O}_2$	3.750E+21	-1.70	149
130	$3\text{-C}_{10}\text{H}_{21} + \text{O}_2 \rightarrow 2\text{-RO}_2$	4.000E+12	0.00	0
131	$2\text{-RO}_2 \rightarrow 3\text{-C}_{10}\text{H}_{21} + \text{O}_2$	3.750E+21	-1.70	149
1161	$2\text{-RO}_2 \rightarrow 3\text{-2-RO}_2\text{H}$	2.000E+11	0.00	71.2
1162	$3\text{-2-RO}_2\text{H} \rightarrow 2\text{-RO}_2$	1.000E+11	0.00	52.3
1317f	$3\text{-2-RO}_2\text{H} \rightarrow 1\text{-C}_{10}\text{H}_{20} + \text{HO}_2$	8.500E+12	0.00	107
1318f	$1\text{-C}_{10}\text{H}_{20} \rightarrow 1\text{-C}_7\text{H}_{15} + \text{C}_3\text{H}_5$	3.500E+16	0.00	297
165f	$3\text{-2-RO}_2\text{H} + \text{O}_2 \rightarrow 3\text{2O}_2\text{RO}_2\text{H}$	2.500E+11	0.00	0
1120f	$3\text{2O}_2\text{RO}_2\text{H} \rightarrow 3\text{-2ORO}_2\text{H} + \text{OH}$	3.500E+13	0.00	104
1202	$3\text{-2ORO}_2\text{H} \rightarrow \text{CH}_2\text{O} + \text{CO} + 3\text{C}_2\text{H}_4 + \text{C}_2\text{H}_5 + \text{OH}$	7.000E+15	0.00	176
s271	$2\text{C}_3\text{H}_3 \rightarrow \text{A}_1\text{-C}_6\text{H}_6$	5.000E+11	0.00	0
s272	$\text{C}_3\text{H}_4 + \text{C}_3\text{H}_3 \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{H}$	2.000E+11	0.00	8.37
s273	$\text{U-C}_6\text{H}_7 \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{H}$	1.000E+10	0.00	0
s274f	$\text{A}_1\text{-C}_6\text{H}_5 \rightarrow \text{U-C}_6\text{H}_5$	4.000E+13	0.00	305
s276	$\text{A}_1\text{-C}_6\text{H}_6 \rightarrow \text{C}_4\text{H}_4 + \text{C}_2\text{H}_2$	1.000E+15	0.00	450
sA276	$\text{A}_1\text{-C}_6\text{H}_5 \rightarrow \text{U-C}_4\text{H}_3 + \text{C}_2\text{H}_2$	4.500E+13	0.00	303
s277	$\text{A}_1\text{-C}_6\text{H}_6 \rightarrow \text{A}_1\text{-C}_6\text{H}_5 + \text{H}$	4.410E+29	-3.90	490
s278f	$\text{A}_1\text{-C}_6\text{H}_6 + \text{H} \rightarrow \text{A}_1\text{-C}_6\text{H}_5 + \text{H}_2$	7.900E+13	0.00	41.8

Number	Reaction	A	n	E
s279f	$A_1\text{-C}_6\text{H}_6 + \text{OH} \rightarrow A_1\text{-C}_6\text{H}_5 + \text{H}_2\text{O}$	1.630E+08	1.42	6.1
s280f	$A_1\text{-C}_6\text{H}_6 + \text{O} \rightarrow A_1\text{-C}_6\text{H}_5 + \text{OH}$	3.553E+01	3.80	3.93
sA280f	$A_1\text{-C}_6\text{H}_6 + \text{O}_2 \rightarrow A_1\text{-C}_6\text{H}_5 + \text{HO}_2$	6.300E+13	0.00	251
s281f	$A_1\text{-C}_6\text{H}_6 + \text{O} \rightarrow \text{C}_6\text{H}_5\text{O} + \text{H}$	2.780E+13	0.00	20.5
s2A281f	$A_1\text{-C}_6\text{H}_5 + \text{HO}_2 \rightarrow \text{C}_6\text{H}_5\text{O} + \text{OH}$	5.000E+13	0.00	4.18
s275	$A_1\text{-C}_6\text{H}_5 + \text{O}_2 \rightarrow \text{C}_6\text{H}_5\text{O} + \text{O}$	8.090E+11	0.00	31.2
s3A281f	$\text{C}_6\text{H}_5\text{O} + \text{H} \rightarrow \text{C}_6\text{H}_5\text{OH}$	2.500E+14	0.00	0
s284f	$\text{C}_6\text{H}_5\text{OH} + \text{H} \rightarrow \text{C}_6\text{H}_5\text{O} + \text{H}_2$	1.150E+14	0.00	51.9
sA284f	$\text{C}_6\text{H}_5\text{OH} + \text{H} \rightarrow A_1\text{-C}_6\text{H}_6 + \text{OH}$	2.210E+13	0.00	33.1
s285f	$\text{C}_6\text{H}_5\text{OH} + \text{OH} \rightarrow \text{C}_6\text{H}_5\text{O} + \text{H}_2\text{O}$	6.000E+12	0.00	0
sA285f	$\text{C}_6\text{H}_5\text{OH} + \text{O} \rightarrow \text{C}_6\text{H}_5\text{O} + \text{OH}$	1.260E+13	0.00	12.1
sA33f	$\text{C}_6\text{H}_5\text{O} \rightarrow \text{C}_5\text{H}_5 + \text{CO}$	2.510E+11	0.00	184
sA39f	$\text{C}_5\text{H}_5 + \text{H} \rightarrow \text{C}_5\text{H}_6$	1.000E+14	0.00	0
sA40f	$\text{C}_5\text{H}_5 + \text{O} \rightarrow \text{U-C}_4\text{H}_5 + \text{CO}$	1.000E+14	0.00	0
sA41f	$\text{C}_5\text{H}_5 + \text{O} \rightarrow \text{C}_5\text{H}_5\text{O}$	1.000E+13	0.00	0
sA43f	$\text{C}_5\text{H}_5 + \text{HO}_2 \rightarrow \text{C}_5\text{H}_5\text{O} + \text{OH}$	3.000E+13	0.00	0
sA44f	$\text{C}_5\text{H}_6 + \text{H} \rightarrow \text{C}_5\text{H}_5 + \text{H}_2$	2.190E+08	1.77	12.6
sA45f	$\text{C}_5\text{H}_6 + \text{O} \rightarrow \text{C}_5\text{H}_5 + \text{OH}$	1.810E+13	0.00	12.9
sA46f	$\text{C}_5\text{H}_6 + \text{OH} \rightarrow \text{C}_5\text{H}_5 + \text{H}_2\text{O}$	3.430E+09	1.18	-1.87

Number	Reaction	A	n	E
sA49f	$C_5H_6 + O_2 \rightarrow C_5H_5O + OH$	1.000E+13	0.00	86.7
sA50f	$C_5H_5O \rightarrow U-C_4H_5 + CO$	2.510E+11	0.00	184
s288f	$A1C2H + H \rightarrow A_1-C_6H_5 + C_2H_2$	1.000E+14	0.00	0
s290	$A1C2H + OH \rightarrow A_1-C_6H_6 + HCCO$	1.000E+13	0.00	0
s292f	$A1C2H + H \rightarrow A1C2H- + H_2$	1.000E+14	0.00	0
s295f	$A1C2H + CH_3 \rightarrow A1C2H- + CH_4$	2.000E+13	0.00	0
s296	$A1C2H- + O_2 \rightarrow U-C_6H_5 + 2CO$	1.000E+13	0.00	0
s298f	$A1C2H + H \rightarrow A1C2H^* + H_2$	1.000E+14	0.00	0
s301f	$A1C2H + CH_3 \rightarrow A1C2H^* + CH_4$	2.000E+13	0.00	0
s303f	$A1C2H^* + C_2H_2 \rightarrow A1C2HAC$	1.000E+13	0.00	0
s304f	$A1C2HAC \rightarrow A2-X$	1.000E+10	0.00	0
s306f	$A2-X + H \rightarrow A_2-C_{10}H_8$	1.000E+13	0.00	0
s307f	$A_2-C_{10}H_8 + H \rightarrow A2-X + H_2$	7.900E+13	0.00	41.8
s308f	$A_2-C_{10}H_8 + OH \rightarrow A2-X + H_2O$	1.630E+08	1.40	6.1
s310f	$A_2-C_{10}H_8 + CH_3 \rightarrow A2-X + CH_4$	2.000E+13	0.00	0
s313f	$A2-X + C_2H_2 \rightarrow A2R5 + H$	1.000E+13	0.00	0
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s315f	$A2R5 + H \rightarrow A2R5- + H_2$	1.000E+14	0.00	0
s318f	$A2R5 + CH_3 \rightarrow A2R5- + CH_4$	2.000E+13	0.00	0
s319f	$A2R5C2H + H \rightarrow A2R5- + C_2H_2$	1.000E+14	0.00	0
s322f	$A2R5C2H + H \rightarrow A2R5C2H^* + H_2$	1.000E+14	0.00	0

Number	Reaction	<i>A</i>	<i>n</i>	<i>E</i>
s325f	$\text{A2R5C2H} + \text{CH}_3 \rightarrow \text{A2R5C2H}^* + \text{CH}_4$	2.000E+13	0.00	0
s326f	$\text{A2R5C2H}^* + \text{C}_2\text{H}_2 \rightarrow \text{ANC2HAC}$	1.000E+13	0.00	0
s327f	$\text{ANC2HAC} \rightarrow \text{A3R5-}$	1.000E+10	0.00	0
s329f	$\text{A3R5} + \text{H} \rightarrow \text{A3R5-} + \text{H}_2$	1.000E+14	0.00	0
s332f	$\text{A3R5} + \text{CH}_3 \rightarrow \text{A3R5-} + \text{CH}_4$	2.000E+13	0.00	0
s333f	$\text{A3R5-} + \text{C}_2\text{H}_2 \rightarrow \text{A3R5AC}$	1.000E+13	0.00	0
s334	$\text{A2R5} + \text{OH} \rightarrow \text{A}_2\text{-C}_{10}\text{H}_8 + \text{HCCO}$	1.000E+13	0.00	0
s335	$\text{A2R5-} + \text{O}_2 \rightarrow \text{A2-X} + 2\text{CO}$	1.000E+13	0.00	0
s339	$\text{A3R5} + \text{OH} \rightarrow \text{A2R5C2H} + \text{HCO} + \text{}_3\text{-CH}_2$	1.000E+13	0.00	0
s342f	$\text{A3R5AC} \rightarrow \text{A}_4\text{-C}_{18}\text{H}_{10} + \text{H}$	1.000E+10	0.00	0
s344	$\text{A}_4\text{-C}_{18}\text{H}_{10} + \text{OH} \rightarrow \text{A3R5} + \text{HCCO}$	1.300E+13	0.00	46
l455f	$\text{A1CH3} + \text{OH} \rightarrow \text{A1CH2} + \text{H}_2\text{O}$	5.190E+09	1.00	3.66
l533f	$\text{A1CH3} + \text{OH} \rightarrow \text{A1CH2O} + \text{H}_2$	2.290E+12	0.00	-1.5
l562f	$\text{A1CH3} + \text{OH} \rightarrow \text{A1CH2OH} + \text{H}$	6.600E+12	0.00	44.3
l456f	$\text{A1CH3} + \text{O}_2 \rightarrow \text{A1CH2} + \text{HO}_2$	3.000E+14	0.00	180
l458f	$\text{A1CH3} + \text{H} \rightarrow \text{A1CH2} + \text{H}_2$	1.260E+14	0.00	35.1
l459f	$\text{A1CH3} + \text{H} \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{CH}_3$	1.200E+13	0.00	21.4
l460f	$\text{A1CH3} \rightarrow \text{A}_1\text{-C}_6\text{H}_5 + \text{CH}_3$	1.000E+16	0.00	405
l461f	$\text{A1CH3} \rightarrow \text{A1CH2} + \text{H}$	2.820E+15	0.00	372
l462f	$\text{A1CH3} + \text{A}_1\text{-C}_6\text{H}_5 \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{A1CH2}$	2.100E+12	0.00	18.4
l463f	$\text{A1CH3} + \text{CH}_3 \rightarrow \text{CH}_4 + \text{A1CH2}$	3.160E+12	0.00	46.4

Number	Reaction	A	n	E
1465f	$\text{A1CH}_3 + \text{O} \rightarrow \text{A1CH}_2 + \text{OH}$	6.300E+11	0.00	0
1548f	$\text{A1CH}_3 + \text{O} \rightarrow \text{A1CH}_2\text{O} + \text{H}$	1.550E+13	0.00	16.6
1457f	$\text{A1CH}_3 + \text{HO}_2 \rightarrow \text{A1CH}_2 + \text{H}_2\text{O}_2$	3.000E+14	0.00	90
1563f	$\text{U-C}_4\text{H}_5 + \text{C}_3\text{H}_4 \rightarrow \text{A1CH}_3 + \text{H}$	2.000E+11	0.00	15.5
1564f	$\text{U-C}_4\text{H}_5 + \text{P-C}_3\text{H}_4 \rightarrow \text{A1CH}_3 + \text{H}$	3.160E+11	0.00	15.5
1470f	$\text{A1CH}_2 + \text{O} \rightarrow \text{A1CHO} + \text{H}$	3.500E+13	0.00	0
1471f	$\text{A1CH}_2 + \text{O} \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{HCO}$	3.500E+13	0.00	0
1472f	$\text{A1CH}_2 + \text{HO}_2 \rightarrow \text{A1CHO} + \text{H} + \text{OH}$	3.500E+13	0.00	0
1473	$\text{A1CH}_2 + \text{HO}_2 \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{HCO} + \text{OH}$	3.500E+13	0.00	0
1474f	$2\text{A1CH}_2 \rightarrow \text{C}_{14}\text{H}_{14}$	5.000E+12	0.00	2.09
1540f	$\text{A1CH}_2 + \text{O}_2 \rightarrow \text{A1CH}_2\text{O} + \text{O}$	6.310E+12	0.00	180
1477	$\text{A1CH}_2\text{OH} + \text{O}_2 \rightarrow \text{A1CHO} + \text{HO}_2 + \text{H}$	2.000E+14	0.00	173
1539f	$\text{A1CH}_2\text{OH} + \text{OH} \rightarrow \text{A1CH}_2\text{O} + \text{H}_2\text{O}$	5.000E+12	0.00	0
1559f	$\text{A1CH}_2\text{OH} + \text{H} \rightarrow \text{A1CH}_2\text{O} + \text{H}_2$	8.000E+13	0.00	34.5
1479f	$\text{A1CH}_2\text{OH} + \text{H} \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{CH}_2\text{OH}$	1.200E+13	0.00	21.6
1481f	$\text{A1CH}_2\text{OH} + \text{A}_1\text{-C}_6\text{H}_5 \rightarrow \text{A1CHO} + \text{A}_1\text{-C}_6\text{H}_6 + \text{H}$	1.400E+12	0.00	18.4
1538	$\text{A1CH}_2\text{O} + \text{M}' \rightarrow \text{A1CHO} + \text{H} + \text{M}'$	2.500E+11	0.00	0
1534f	$\text{A1CH}_2\text{O} + \text{H} \rightarrow \text{A1CHO} + \text{H}_2$	3.000E+13	0.00	0
1535f	$\text{A1CH}_2\text{O} + \text{O} \rightarrow \text{A1CHO} + \text{OH}$	4.200E+13	0.00	0
1536f	$\text{A1CH}_2\text{O} + \text{OH} \rightarrow \text{A1CHO} + \text{H}_2\text{O}$	2.400E+13	0.00	0

Number	Reaction	A	n	E
l537f	$\text{A1CH}_2\text{O} + \text{O}_2 \rightarrow \text{A1CHO} + \text{HO}_2$	1.000E+13	0.00	21
l547f	$\text{A1CH}_2\text{O} + \text{H} \rightarrow \text{A1CH}_2\text{OH}$	2.500E+13	0.00	0
l482f	$\text{A1CHO} \rightarrow \text{A1CO} + \text{H}$	3.980E+15	0.00	350
l483f	$\text{A1CHO} + \text{O}_2 \rightarrow \text{A1CO} + \text{HO}_2$	1.020E+13	0.00	163
l484f	$\text{A1CHO} + \text{OH} \rightarrow \text{A1CO} + \text{H}_2\text{O}$	1.710E+09	1.18	-1.87
l485f	$\text{A1CHO} + \text{H} \rightarrow \text{A1CO} + \text{H}_2$	5.000E+13	0.00	20.6
l486f	$\text{A1CHO} + \text{H} \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{HCO}$	1.200E+13	0.00	21.6
l487f	$\text{A1CHO} + \text{O} \rightarrow \text{A1CO} + \text{OH}$	9.040E+12	0.00	12.9
l558f	$\text{A1CHO} + \text{HO}_2 \rightarrow \text{A1CO} + \text{H}_2\text{O}_2$	1.990E+12	0.00	48.8
l489f	$\text{A1CHO} + \text{CH}_3 \rightarrow \text{A1CO} + \text{CH}_4$	2.770E+03	2.81	24.2
l490f	$\text{A1CHO} + \text{A}_1\text{-C}_6\text{H}_5 \rightarrow \text{A1CO} + \text{A}_1\text{-C}_6\text{H}_6$	7.010E+11	0.00	18.4
l497f	$\text{A1CO} \rightarrow \text{A}_1\text{-C}_6\text{H}_5 + \text{CO}$	3.980E+14	0.00	123
l557f	$\text{A1CO} + \text{H} \rightarrow \text{A}_1\text{-C}_6\text{H}_6 + \text{CO}$	3.000E+13	0.00	0
t1f	$\text{TMB-C}_9\text{H}_{12} + \text{OH} \rightarrow \text{XYL-CH}_2 + \text{H}_2\text{O}$	5.190E+09	1.00	3.66
t2f	$\text{TMB-C}_9\text{H}_{12} + \text{OH} \rightarrow \text{XYL-CH}_2\text{O} + \text{H}_2$	2.290E+12	0.00	-1.5
t3f	$\text{TMB-C}_9\text{H}_{12} + \text{OH} \rightarrow \text{XYLCH}_2\text{OH} + \text{H}$	6.600E+12	0.00	44.3
t4f	$\text{TMB-C}_9\text{H}_{12} + \text{O}_2 \rightarrow \text{XYL-CH}_2 + \text{HO}_2$	3.000E+14	0.00	180
t5f	$\text{TMB-C}_9\text{H}_{12} + \text{H} \rightarrow \text{XYL-CH}_2 + \text{H}_2$	4.000E+14	0.00	35.1
t6f	$\text{TMB-C}_9\text{H}_{12} + \text{H} \rightarrow \text{A1-2CH}_3 + \text{CH}_3$	1.200E+13	0.00	21.4

Number	Reaction	<i>A</i>	<i>n</i>	<i>E</i>
t7f	TMB-C ₉ H ₁₂ → XYL- + CH ₃	1.000E+16	0.00	384
t8f	TMB-C ₉ H ₁₂ → XYL-CH ₂ + H	5.000E+15	0.00	355
t10f	TMB-C ₉ H ₁₂ + CH ₃ → CH ₄ + XYL-CH ₂	3.160E+12	0.00	46.4
t11f	TMB-C ₉ H ₁₂ + O → XYL-CH ₂ + OH	6.300E+11	0.00	0
t12f	TMB-C ₉ H ₁₂ + O → XYL-CH ₂ O + H	1.550E+13	0.00	16.6
t15f	TMB-C ₉ H ₁₂ + HO ₂ → XYL-CH ₂ + H ₂ O ₂	3.000E+14	0.00	90
t16f	XYL-CH ₂ + O → XYL-CHO + H	3.500E+13	0.00	0
t17f	XYL-CH ₂ + O → A1-2CH ₃ + HCO	3.500E+13	0.00	0
t18	XYL-CH ₂ + HO ₂ → XYL-CHO + H + OH	3.500E+13	0.00	0
t19	XYL-CH ₂ + HO ₂ → A1-2CH ₃ + HCO + OH	3.500E+13	0.00	0
t21f	XYL-CH ₂ + O ₂ → XYL-CH ₂ O + O	6.310E+12	0.00	180
t25	XYLCH ₂ OH + O ₂ → XYL-CHO + HO ₂ + H	2.000E+14	0.00	173
t26f	XYLCH ₂ OH + OH → XYL-CHO + H ₂ O	5.000E+12	0.00	0
t27f	XYLCH ₂ OH + H → XYL-CHO + H ₂	8.000E+13	0.00	34.5
t28f	XYLCH ₂ OH + H → A1-2CH ₃ + CH ₂ OH	1.200E+13	0.00	21.6
t29	XYLCH ₂ OH + XYL- → XYL-CHO + A1-2CH ₃ + H	1.400E+12	0.00	18.4
t30	XYL-CH ₂ O + M' → XYL-CHO + H + M'	2.500E+11	0.00	0
t31f	XYL-CH ₂ O + H → XYL-CHO + H ₂	3.000E+13	0.00	0
t32f	XYL-CH ₂ O + O → XYL-CHO + OH	4.200E+13	0.00	0
t33f	XYL-CH ₂ O + OH → XYL-CHO + H ₂ O	2.400E+13	0.00	0
t34f	XYL-CH ₂ O + O ₂ → XYL-CHO + HO ₂	1.000E+13	0.00	21
t35f	XYL-CH ₂ O + H → XYLCH ₂ OH	2.500E+13	0.00	0

Number	Reaction	A	n	E
t36f	XYL-CHO \rightarrow XYL-CO + H	3.980E+15	0.00	350
t37f	XYL-CHO + O ₂ \rightarrow XYL-CO + HO ₂	1.020E+13	0.00	163
t38f	XYL-CHO + OH \rightarrow XYL-CO + H ₂ O	1.710E+09	1.18	-1.87
t39f	XYL-CHO + H \rightarrow XYL-CO + H ₂	5.000E+13	0.00	20.6
t40f	XYL-CHO + H \rightarrow A1-2CH3 + HCO	1.200E+13	0.00	21.6
t41f	XYL-CHO + O \rightarrow XYL-CO + OH	9.040E+12	0.00	12.9
t42f	XYL-CHO + HO ₂ \rightarrow XYL-CO + H ₂ O ₂	1.990E+12	0.00	48.8
t43f	XYL-CHO + CH ₃ \rightarrow XYL-CO + CH ₄	2.770E+03	2.81	24.2
t44f	XYL-CHO + XYL- \rightarrow XYL-CO + A1-2CH3	7.010E+11	0.00	18.4
t45f	XYL-CO \rightarrow XYL- + CO	3.980E+14	0.00	123
t46f	XYL-CO + H \rightarrow A1-2CH3 + CO	3.000E+13	0.00	0
p1f	A1-2CH3 + OH \rightarrow TYL-CH2 + H ₂ O	5.190E+09	1.00	3.66
p2f	A1-2CH3 + OH \rightarrow TYL-CH2O + H ₂	2.290E+12	0.00	-1.5
p3f	A1-2CH3 + OH \rightarrow TYLCH2OH + H	6.600E+12	0.00	44.3
p4f	A1-2CH3 + O ₂ \rightarrow TYL-CH2 + HO ₂	3.000E+14	0.00	180
p5f	A1-2CH3 + H \rightarrow TYL-CH2 + H ₂	4.000E+14	0.00	35
p6f	A1-2CH3 + H \rightarrow A1CH3 + CH ₃	1.200E+13	0.00	21.4
p7f	A1-2CH3 \rightarrow TYL- + CH ₃	1.000E+16	0.00	384
p8f	A1-2CH3 \rightarrow TYL-CH2 + H	5.000E+15	0.00	355

Number	Reaction	A	n	E
p9f	$\text{A1-2CH}_3 + \text{TYL-} \rightarrow \text{A1CH}_3 + \text{TYL-CH}_2$	2.100E+12	0.00	18.4
p10f	$\text{A1-2CH}_3 + \text{CH}_3 \rightarrow \text{CH}_4 + \text{TYL-CH}_2$	3.160E+12	0.00	46.4
p11f	$\text{A1-2CH}_3 + \text{O} \rightarrow \text{TYL-CH}_2 + \text{OH}$	6.300E+11	0.00	0
p12f	$\text{A1-2CH}_3 + \text{O} \rightarrow \text{TYL-CH}_2\text{O} + \text{H}$	1.550E+13	0.00	16.6
p15f	$\text{A1-2CH}_3 + \text{HO}_2 \rightarrow \text{TYL-CH}_2 + \text{H}_2\text{O}_2$	3.000E+14	0.00	90
p16f	$\text{TYL-CH}_2 + \text{O} \rightarrow \text{TYL-CHO} + \text{H}$	3.500E+13	0.00	0
p17f	$\text{TYL-CH}_2 + \text{O} \rightarrow \text{A1CH}_3 + \text{HCO}$	3.500E+13	0.00	0
p18f	$\text{TYL-CH}_2 + \text{HO}_2 \rightarrow \text{TYL-CHO} + \text{H} + \text{OH}$	3.500E+13	0.00	0
p19	$\text{TYL-CH}_2 + \text{HO}_2 \rightarrow \text{A1CH}_3 + \text{HCO} + \text{OH}$	3.500E+13	0.00	0
p21f	$\text{TYL-CH}_2 + \text{O}_2 \rightarrow \text{TYL-CH}_2\text{O} + \text{O}$	6.310E+12	0.00	180
p25	$\text{TYLCH}_2\text{OH} + \text{O}_2 \rightarrow \text{TYL-CHO} + \text{HO}_2 + \text{H}$	2.000E+14	0.00	173
p26f	$\text{TYLCH}_2\text{OH} + \text{OH} \rightarrow \text{TYL-CHO} + \text{H}_2\text{O}$	5.000E+12	0.00	0
p27f	$\text{TYLCH}_2\text{OH} + \text{H} \rightarrow \text{TYL-CHO} + \text{H}_2$	8.000E+13	0.00	34.5
p28f	$\text{TYLCH}_2\text{OH} + \text{H} \rightarrow \text{A1CH}_3 + \text{CH}_2\text{OH}$	1.200E+13	0.00	21.6
p29f	$\text{TYLCH}_2\text{OH} + \text{TYL-} \rightarrow \text{TYL-CHO} + \text{A1CH}_3 + \text{H}$	1.400E+12	0.00	18.4
p30f	$\text{TYL-CH}_2\text{O} + \text{M}' \rightarrow \text{TYL-CHO} + \text{H} + \text{M}'$	2.500E+11	0.00	0
p31f	$\text{TYL-CH}_2\text{O} + \text{H} \rightarrow \text{TYL-CHO} + \text{H}_2$	3.000E+13	0.00	0
p32f	$\text{TYL-CH}_2\text{O} + \text{O} \rightarrow \text{TYL-CHO} + \text{OH}$	4.200E+13	0.00	0
p33f	$\text{TYL-CH}_2\text{O} + \text{OH} \rightarrow \text{TYL-CHO} + \text{H}_2\text{O}$	2.400E+13	0.00	0
p34f	$\text{TYL-CH}_2\text{O} + \text{O}_2 \rightarrow \text{TYL-CHO} + \text{HO}_2$	1.000E+13	0.00	21

Number	Reaction	A	n	E
p35f	TYL-CH ₂ O + H → TYLCH ₂ OH	2.500E+13	0.00	0
p36f	TYL-CHO → TYL-CO + H	3.980E+15	0.00	350
p37f	TYL-CHO + O ₂ → TYL-CO + HO ₂	1.020E+13	0.00	163
p38f	TYL-CHO + OH → TYL-CO + H ₂ O	1.710E+09	1.18	-1.87
p39f	TYL-CHO + H → TYL-CO + H ₂	5.000E+13	0.00	20.6
p40f	TYL-CHO + H → A1CH ₃ + HCO	1.200E+13	0.00	21.6
p41f	TYL-CHO + O → TYL-CO + OH	9.040E+12	0.00	12.9
p42f	TYL-CHO + HO ₂ → TYL-CO + H ₂ O ₂	1.990E+12	0.00	48.8
p43f	TYL-CHO + CH ₃ → TYL-CO + CH ₄	2.770E+03	2.81	24.2
p44f	TYL-CHO + TYL- → TYL-CO + A1CH ₃	7.010E+11	0.00	18.4
p45f	TYL-CO → TYL- + CO	3.980E+14	0.00	123
p46f	TYL-CO + H → A1CH ₃ + CO	3.000E+13	0.00	0
p47	TYL- → A1CH ₂	3.000E+19	0.00	0
p48	XYL- → TYL-CH ₂	3.000E+19	0.00	0