Number	Reaction				A	n	E	Ref.
1f	$H + O_2$	$\rightleftharpoons$	$OH + O$		3.520E+16	-0.70	71.4	[1]
2f	$H_2 + O$	$\rightleftharpoons$	$OH + H$		5.060E+04	2.67	26.3	[1]
3f	$H_2 + OH$	$\rightleftharpoons$	$H_2O + H$		1.170E+09	1.30	15.2	[1]
4f	$H_2O + O$	$\rightleftharpoons$	$2\ OH$		7.600E+00	3.84	53.5	[1]
a5f[a]	$H + O + M^{(1)}$	$\rightleftharpoons$	$OH + M^{(1)}$		4.710E+18	-1.00	0	[2, 3]
5f[a]	$2\ H + M^{(2)}$	$\rightleftharpoons$	$H_2 + M^{(2)}$		1.300E+18	-1.00	0	[4]
6f[a]	$H + OH + M^{(3)}$	$\rightleftharpoons$	$H_2O + M^{(3)}$		4.000E+22	-2.00	0	[4]
7f[a]	$2\ O + M^{(4)}$	$\rightleftharpoons$	$O_2 + M^{(4)}$		6.170E+15	-0.50	0	[1]
8f[a,b]	$H + O_2 + M^{(5)}$	$\rightleftharpoons$	$HO_2 + M^{(5)}$	k_0	5.750E+19	-1.40	0	[5]
				k_∞	4.650E+12	0.44	0	
a11f[a]	$O + OH + M$	$\rightleftharpoons$	$HO_2 + M$		1.000E+16	0.00	0	[6]
9f	$HO_2 + H$	$\rightleftharpoons$	$2\ OH$		7.080E+13	0.00	1.23	[7]
10f	$HO_2 + H$	$\rightleftharpoons$	$H_2 + O_2$		1.660E+13	0.00	3.44	[7]
11f	$HO_2 + H$	$\rightleftharpoons$	$H_2O + O$		3.100E+13	0.00	7.2	[1]
12f	$HO_2 + O$	$\rightleftharpoons$	$OH + O_2$		2.000E+13	0.00	0	[8]
13f	$HO_2 + OH$	$\rightleftharpoons$	$H_2O + O_2$		2.890E+13	0.00	-2.08	[1]
14f[a,b]	$2\ OH + M^{(6)}$	$\rightleftharpoons$	$H_2O_2 + M^{(6)}$	k_0	2.300E+18	-0.90	-7.12	[1]
				k_∞	7.400E+13	-0.37	0	
15f	$2\ HO_2$	$\rightleftharpoons$	$H_2O_2 + O_2$		3.020E+12	0.00	5.8	[1]
16f	$H_2O_2 + H$	$\rightleftharpoons$	$HO_2 + H_2$		4.790E+13	0.00	33.3	[2]
17f	$H_2O_2 + H$	$\rightleftharpoons$	$H_2O + OH$		1.000E+13	0.00	15	[2]
18f	$H_2O_2 + OH$	$\rightleftharpoons$	$H_2O + HO_2$		7.080E+12	0.00	6	[1]
19f	$H_2O_2 + O$	$\rightleftharpoons$	$HO_2 + OH$		9.550E+06	2.00	16.6	[1]
s19f	$CO + O_2$	$\rightleftharpoons$	$CO_2 + O$		1.000E+12	0.00	200	[4]
20f	$CO + OH$	$\rightleftharpoons$	$CO_2 + H$		4.400E+06	1.50	-3.1	[1]
21f	$CO + HO_2$	$\rightleftharpoons$	$CO_2 + OH$		6.000E+13	0.00	96.2	[1]
22f[a]	$HCO + M^{(7)}$	$\rightleftharpoons$	$CO + H + M^{(7)}$		1.860E+17	-1.00	71.1	[9]
23f	$HCO + H$	$\rightleftharpoons$	$CO + H_2$		1.000E+14	0.00	0	[1]
24f	$HCO + O$	$\rightleftharpoons$	$CO + OH$		3.000E+13	0.00	0	[1]
25f	$HCO + O$	$\rightleftharpoons$	$CO_2 + H$		3.000E+13	0.00	0	[1]
26f	$HCO + OH$	$\rightleftharpoons$	$CO + H_2O$		5.020E+13	0.00	0	[1]
27f	$HCO + O_2$	$\rightleftharpoons$	$CO + HO_2$		3.000E+12	0.00	0	[1]
28f[a]	$CH_2O + M^{(8)}$	$\rightleftharpoons$	$HCO + H + M^{(8)}$		6.260E+16	0.00	326	[1]
29f	$CH_2O + H$	$\rightleftharpoons$	$HCO + H_2$		1.260E+08	1.62	9.06	[1]
30f	$CH_2O + O$	$\rightleftharpoons$	$HCO + OH$		3.500E+13	0.00	14.7	[1]
31f	$CH_2O + OH$	$\rightleftharpoons$	$HCO + H_2O$		3.900E+10	0.89	1.7	[1]

Number	Reaction	A	n	E	Ref.
32f	$CH_4 + H \rightleftharpoons H_2 + CH_3$	1.300E+04	3.00	33.6	[10]
33f	$CH_4 + OH \rightleftharpoons H_2O + CH_3$	1.600E+07	1.83	11.6	[10]
34f	$CH_4 + O \rightleftharpoons CH_3 + OH$	1.900E+09	1.44	36.3	[11]
35f	$CH_4 + O_2 \rightleftharpoons CH_3 + HO_2$	3.980E+13	0.00	238	[9, 12]
36f	$CH_4 + HO_2 \rightleftharpoons CH_3 + H_2O_2$	9.030E+12	0.00	103	[9, 12]
37f	$CH_3 + H \rightleftharpoons$ T-$CH_2 + H_2$	1.800E+14	0.00	63.2	[11]
38f	$CH_3 + H \rightleftharpoons$ S-$CH_2 + H_2$	1.550E+14	0.00	56.4	[11]
39f	$CH_3 + OH \rightleftharpoons$ S-$CH_2 + H_2O$	1.000E+13	0.00	10.5	[13]
40f	$CH_3 + O \rightleftharpoons CH_2O + H$	8.430E+13	0.00	0	[11]
41f	$CH_3 +$ T-$CH_2 \rightleftharpoons C_2H_4 + H$	4.220E+13	0.00	0	[14]
42f	$CH_3 + HO_2 \rightleftharpoons CH_3O + OH$	5.000E+12	0.00	0	[14]
43f	$CH_3 + O_2 \rightleftharpoons CH_2O + OH$	3.300E+11	0.00	37.4	[14]
44f	$CH_3 + O_2 \rightleftharpoons CH_3O + O$	1.330E+14	0.00	131	[14]
45f	$2\ CH_3 \rightleftharpoons C_2H_4 + H_2$	1.000E+14	0.00	134	[15]
46f	$2\ CH_3 \rightleftharpoons C_2H_5 + H$	3.160E+13	0.00	61.5	[16]
47f[a,b]	$CH_3 + H + M \rightleftharpoons CH_4 + M$ k_0	6.260E+23	-1.80	0	[17]
	k_∞	2.110E+14	0.00	0	
48f[a,b]	$2\ CH_3 + M \rightleftharpoons C_2H_6 + M$ k_0	1.270E+41	-7.00	11.6	[10]
	k_∞	1.810E+13	0.00	0	
49f	S-$CH_2 + OH \rightleftharpoons CH_2O + H$	3.000E+13	0.00	0	[11]
50f	S-$CH_2 + O_2 \rightleftharpoons CO + OH + H$	3.130E+13	0.00	0	[11]
51f	S-$CH_2 + CO_2 \rightleftharpoons CO + CH_2O$	3.000E+12	0.00	0	[18]
52f[a]	S-$CH_2 + M^{(5)} \rightleftharpoons$ T-$CH_2 + M^{(5)}$	6.000E+12	0.00	0	[11]
53f	T-$CH_2 + H \rightleftharpoons CH + H_2$	6.020E+12	0.00	-7.48	[14]
54f	T-$CH_2 + OH \rightleftharpoons CH_2O + H$	2.500E+13	0.00	0	[11]
55f	T-$CH_2 + OH \rightleftharpoons CH + H_2O$	1.130E+07	2.00	12.6	[11]
56f	T-$CH_2 + O \rightleftharpoons CO + 2\ H$	8.000E+13	0.00	0	[19]
57f	T-$CH_2 + O \rightleftharpoons CO + H_2$	4.000E+13	0.00	0	[19]
58f	T-$CH_2 + O_2 \rightleftharpoons CO_2 + H_2$	2.630E+12	0.00	6.24	[18]
59f	T-$CH_2 + O_2 \rightleftharpoons CO + OH + H$	6.580E+12	0.00	6.24	[18]
60f	2 T-$CH_2 \rightleftharpoons C_2H_2 + 2\ H$	1.000E+14	0.00	0	[11]
61f	$CH + O \rightleftharpoons CO + H$	4.000E+13	0.00	0	[20]
62f	$CH + O_2 \rightleftharpoons HCO + O$	1.770E+11	0.76	-2	[21]
63f	$CH + H_2O \rightleftharpoons CH_2O + H$	1.170E+15	-0.75	0	[18]
64f	$CH + CO_2 \rightleftharpoons HCO + CO$	4.800E+01	3.22	-13.5	[21]
70f	$CH_3O + H \rightleftharpoons CH_2O + H_2$	2.000E+13	0.00	0	[22]

Number	Reaction				A	n	E	Ref.
71f	$CH_3O + H$	$\rightleftharpoons$	$S\text{-}CH_2 + H_2O$		1.600E+13	0.00	0	[22]
72f	$CH_3O + OH$	$\rightleftharpoons$	$CH_2O + H_2O$		5.000E+12	0.00	0	[22]
73f	$CH_3O + O$	$\rightleftharpoons$	$OH + CH_2O$		1.000E+13	0.00	0	[22]
74f	$CH_3O + O_2$	$\rightarrow$	$CH_2O + HO_2$		4.280E-13	7.60	-14.8	[22]
75f[a]	$CH_3O + M$	$\rightleftharpoons$	$CH_2O + H + M$		1.000E+13	0.00	56.5	[22]
77f	$C_2H_6 + H$	$\rightleftharpoons$	$C_2H_5 + H_2$		5.400E+02	3.50	21.8	[11]
78f	$C_2H_6 + O$	$\rightleftharpoons$	$C_2H_5 + OH$		1.400E+00	4.30	11.6	[11]
79f	$C_2H_6 + OH$	$\rightleftharpoons$	$C_2H_5 + H_2O$		2.200E+07	1.90	4.7	[11]
80f	$C_2H_6 + CH_3$	$\rightleftharpoons$	$C_2H_5 + CH_4$		5.500E-01	4.00	34.7	[11]
81f[a,b]	$C_2H_6 + M$	$\rightleftharpoons$	$C_2H_5 + H + M$	k_0	4.900E+42	-6.43	448	[10]
				k_∞	8.850E+20	-1.23	428	
82f	$C_2H_5 + H$	$\rightleftharpoons$	$C_2H_4 + H_2$		3.000E+13	0.00	0	[11]
83f	$C_2H_5 + O$	$\rightleftharpoons$	$C_2H_4 + OH$		3.060E+13	0.00	0	[11]
84f	$C_2H_5 + O$	$\rightleftharpoons$	$CH_3 + CH_2O$		4.240E+13	0.00	0	[11]
85f	$C_2H_5 + O_2$	$\rightleftharpoons$	$C_2H_4 + HO_2$		2.000E+12	0.00	20.9	[11]
86f	C_2H_5	$\rightleftharpoons$	$C_2H_4 + H$	k_0	3.990E+33	-4.99	167	[23]
				k_∞	1.110E+10	1.04	154	
87f	$C_2H_4 + H$	$\rightleftharpoons$	$C_2H_3 + H_2$		4.490E+07	2.12	55.9	[24]
88f	$C_2H_4 + OH$	$\rightleftharpoons$	$C_2H_3 + H_2O$		5.530E+05	2.31	12.4	[24]
89f	$C_2H_4 + O$	$\rightleftharpoons$	$CH_3 + HCO$		2.250E+06	2.08	0	[14]
90f	$C_2H_4 + O$	$\rightleftharpoons$	$CH_2CHO + H$		1.210E+06	2.08	0	[14]
91f	$2\ C_2H_4$	$\rightleftharpoons$	$C_2H_3 + C_2H_5$		5.010E+14	0.00	271	[25]
92f	$C_2H_4 + O_2$	$\rightleftharpoons$	$C_2H_3 + HO_2$		4.220E+13	0.00	241	[26]
93f	$C_2H_4 + HO_2$	$\rightleftharpoons$	$C_2H_4O + OH$		2.230E+12	0.00	71.9	[14]
s93f	$C_2H_4O + HO_2$	$\rightleftharpoons$	$CH_3 + CO + H_2O_2$		4.000E+12	0.00	71.2	[14]
94f[a]	$C_2H_4 + M$	$\rightleftharpoons$	$C_2H_3 + H + M$		2.600E+17	0.00	404	[17]
95f[a]	$C_2H_4 + M$	$\rightleftharpoons$	$C_2H_2 + H_2 + M$		3.500E+16	0.00	299	[17]
96f	$C_2H_3 + H$	$\rightleftharpoons$	$C_2H_2 + H_2$		1.210E+13	0.00	0	[17]
97f[a,b]	$C_2H_3 + M$	$\rightleftharpoons$	$C_2H_2 + H + M$	k_0	1.510E+14	0.10	137	[27]
				k_∞	6.380E+09	1.00	157	
98f	$C_2H_3 + O_2$	$\rightleftharpoons$	$CH_2O + HCO$		1.700E+29	-5.31	27.2	[28]
99f	$C_2H_3 + O_2$	$\rightleftharpoons$	$CH_2CHO + O$		7.000E+14	-0.61	22	[27, 28]
100f	$C_2H_3 + O_2$	$\rightleftharpoons$	$C_2H_2 + HO_2$		5.190E+15	-1.26	13.9	[27, 28]
101f	CH_2CHO	$\rightleftharpoons$	$CH_2CO + H$		1.047E+37	-7.19	186	[26]
102f	$C_2H_2 + O$	$\rightleftharpoons$	$HCCO + H$		4.000E+14	0.00	44.6	[19]
103f	$C_2H_2 + O$	$\rightleftharpoons$	$T\text{-}CH_2 + CO$		1.600E+14	0.00	41.4	[19]

Number	Reaction			A	n	E	Ref.
104f	$C_2H_2 + O_2$	$\rightleftharpoons$	$CH_2O + CO$	4.600E+15	-0.54	188	[29]
105f	$C_2H_2 + OH$	$\rightleftharpoons$	$CH_2CO + H$	1.900E+07	1.70	4.18	[9, 30]
106f	$C_2H_2 + OH$	$\rightleftharpoons$	$C_2H + H_2O$	3.370E+07	2.00	58.6	[9, 30]
107f	$CH_2CO + H$	$\rightleftharpoons$	$CH_3 + CO$	1.500E+09	1.43	11.2	[9, 30]
108f	$CH_2CO + O$	$\rightleftharpoons$	$T\text{-}CH_2 + CO_2$	2.000E+13	0.00	9.6	[9, 30]
109f	$CH_2CO + O$	$\rightleftharpoons$	$HCCO + OH$	1.000E+13	0.00	8.37	[9, 30]
111f	$CH_2CO + CH_3$	$\rightleftharpoons$	$C_2H_5 + CO$	9.000E+10	0.00	0	[9, 30]
112f	$HCCO + H$	$\rightleftharpoons$	$S\text{-}CH_2 + CO$	1.500E+14	0.00	0	[19]
113f	$HCCO + OH$	$\rightleftharpoons$	$HCO + CO + H$	2.000E+12	0.00	0	[31]
114f	$HCCO + O$	$\rightleftharpoons$	$2\ CO + H$	9.640E+13	0.00	0	[19]
115f	$HCCO + O_2$	$\rightleftharpoons$	$2\ CO + OH$	2.880E+07	1.70	4.19	[27]
116f	$HCCO + O_2$	$\rightleftharpoons$	$CO_2 + CO + H$	1.400E+07	1.70	4.19	[27]
117f	$C_2H + OH$	$\rightleftharpoons$	$HCCO + H$	2.000E+13	0.00	0	[11, 30]
118f	$C_2H + O$	$\rightleftharpoons$	$CO + CH$	1.020E+13	0.00	0	[11, 30]
119f	$C_2H + O_2$	$\rightleftharpoons$	$HCCO + O$	6.020E+11	0.00	0	[11, 30]
120f	$C_2H + O_2$	$\rightleftharpoons$	$CH + CO_2$	4.500E+15	0.00	105	[11, 30]
121f	$C_2H + O_2$	$\rightleftharpoons$	$HCO + CO$	2.410E+12	0.00	0	[11, 30]
65f	$CH_2OH + H$	$\rightleftharpoons$	$CH_2O + H_2$	3.000E+13	0.00	0	[22]
66f	$CH_2OH + H$	$\rightleftharpoons$	$CH_3 + OH$	1.750E+14	0.00	11.7	[22]
67f	$CH_2OH + OH$	$\rightleftharpoons$	$CH_2O + H_2O$	2.400E+13	0.00	0	[22]
68f	$CH_2OH + O_2$	$\rightleftharpoons$	$CH_2O + HO_2$	5.000E+12	0.00	0	[22]
69f[a]	$CH_2OH + M^{(5)}$	$\rightleftharpoons$	$CH_2O + H + M^{(5)}$	5.000E+13	0.00	105	[22]
76f[a]	$CH_3O + M^{(9)}$	$\rightleftharpoons$	$CH_2OH + M^{(9)}$	1.000E+14	0.00	80	[22]
110f	$CH_2CO + OH$	$\rightleftharpoons$	$CH_2OH + CO$	1.020E+13	0.00	0	[22]
m1f	$CH_3OH + OH$	$\rightleftharpoons$	$CH_2OH + H_2O$	1.440E+06	2.00	-3.51	[22]
m2f	$CH_3OH + OH$	$\rightleftharpoons$	$CH_3O + H_2O$	6.300E+06	2.00	6.3	[22]
m3f	$CH_3OH + H$	$\rightleftharpoons$	$CH_2OH + H_2$	1.640E+07	2.00	18.9	[22]
m4f	$CH_3OH + H$	$\rightleftharpoons$	$CH_3O + H_2$	3.830E+07	2.00	24.5	[22]
m5f	$CH_3OH + O$	$\rightleftharpoons$	$CH_2OH + OH$	1.000E+13	0.00	19.6	[22]
m6f	$CH_3OH + HO_2$	$\rightleftharpoons$	$CH_2OH + H_2O_2$	6.200E+12	0.00	81.1	[22]
m7f	$CH_3OH + O_2$	$\rightleftharpoons$	$CH_2OH + HO_2$	2.000E+13	0.00	188	[22]
c1f	$C_3H_4 + O$	$\rightleftharpoons$	$C_2H_4 + CO$	2.000E+07	1.80	4.18	[32]
c2f	$CH_3 + C_2H_2$	$\rightleftharpoons$	$C_3H_4 + H$	2.560E+09	1.10	57.1	[32]
c3f	$C_3H_4 + O$	$\rightleftharpoons$	$HCCO + CH_3$	7.300E+12	0.00	9.41	[32]
c6f	$C_3H_3 + H$	$\rightleftharpoons$	C_3H_4 k_0	9.000E+15	1.00	0	[33]
			k_∞	3.000E+13	0.00	0	

Number	Reaction		A	n	E	Ref.
c8f	$C_3H_3 + HO_2 \rightleftharpoons C_3H_4 + O_2$		2.500E+12	0.00	0	[33]
c9f	$C_3H_4 + OH \rightleftharpoons C_3H_3 + H_2O$		5.300E+06	2.00	8.37	[34]
c10f	$C_3H_3 + O_2 \rightleftharpoons CH_2CO + HCO$		3.000E+10	0.00	12	[35]
c11f[a,b]	$C_3H_4 + H + M \rightleftharpoons C_3H_5 + M$	k_0	3.000E+24	-2.00	0	[33]
		k_∞	4.000E+13	0.00	0	
c12f	$C_3H_5 + H \rightleftharpoons C_3H_4 + H_2$		1.800E+13	0.00	0	[36]
c13f	$C_3H_5 + O_2 \rightleftharpoons C_3H_4 + HO_2$		4.990E+15	-1.40	93.8	[37]
c14f	$C_3H_5 + CH_3 \rightleftharpoons C_3H_4 + CH_4$		3.000E+12	-0.32	-0.548	[33]
c15f[a,b]	$C_2H_2 + CH_3 + M \rightleftharpoons C_3H_5 + M$	k_0	2.000E+09	1.00	0	[33]
		k_∞	6.000E+08	0.00	0	
c16f	$C_3H_5 + OH \rightleftharpoons C_3H_4 + H_2O$		6.000E+12	0.00	0	[33]
c18f	$C_3H_3 + HCO \rightleftharpoons C_3H_4 + CO$		2.500E+13	0.00	0	[34]
c20f	$C_3H_3 + HO_2 \rightleftharpoons OH + CO + C_2H_3$		8.000E+11	0.00	0	[32]
c21f	$C_3H_4 + O_2 \rightleftharpoons CH_3 + HCO + CO$		4.000E+14	0.00	175	[38]
140f	$C_3H_6 + O \rightleftharpoons C_2H_5 + HCO$		3.500E+07	1.65	-4.07	[36]
142f	$C_3H_6 + OH \rightleftharpoons C_3H_5 + H_2O$		3.100E+06	2.00	-1.25	[36]
e3f	$C_3H_6 + O \rightleftharpoons CH_2CO + CH_3 + H$		1.200E+08	1.65	1.37	[36]
138f	$C_3H_6 + H \rightleftharpoons C_3H_5 + H_2$		1.700E+05	2.50	10.4	[36]
136f[a,b]	$C_3H_5 + H + M^{(10)} \rightleftharpoons C_3H_6 + M^{(10)}$	k_0	1.330E+60	-12.00	25	[32]
		k_∞	2.000E+14	0.00	0	
e1f	$C_3H_5 + HO_2 \rightleftharpoons C_3H_6 + O_2$		2.660E+12	0.00	0	[14]
e2f	$C_3H_5 + HO_2 \rightleftharpoons OH + C_2H_3 + CH_2O$		3.000E+12	0.00	0	[14]
137f[a,b]	$C_2H_3 + CH_3 + M^{(10)} \rightleftharpoons C_3H_6 + M^{(10)}$	k_0	4.270E+58	-11.94	40.9	[32]
		k_∞	2.500E+13	0.00	0	
e4f	$C_3H_6 + H \rightleftharpoons C_2H_4 + CH_3$		1.600E+22	-2.39	46.8	[32]
e5f	$CH_3 + C_2H_3 \rightleftharpoons C_3H_5 + H$		1.500E+24	-2.83	77.9	[32]
p1f[a,b]	$C_3H_8 + M \rightleftharpoons CH_3 + C_2H_5 + M$	k_0	7.830E+18	0.00	272	[17]
		k_∞	1.100E+17	0.00	353	
p2f	$C_3H_8 + O_2 \rightleftharpoons$ I-$C_3H_7 + HO_2$		4.000E+13	0.00	199	[39, 32, 40]
p3f	$C_3H_8 + O_2 \rightleftharpoons$ N-$C_3H_7 + HO_2$		4.000E+13	0.00	213	[39, 32, 40]
p4f	$C_3H_8 + H \rightleftharpoons$ I-$C_3H_7 + H_2$		1.300E+06	2.40	18.7	[39, 32, 40]
p5f	$C_3H_8 + H \rightleftharpoons$ N-$C_3H_7 + H_2$		1.330E+06	2.54	28.3	[40, 41]
p6f	$C_3H_8 + O \rightleftharpoons$ I-$C_3H_7 + OH$		4.760E+04	2.71	8.82	[40, 32]
p7f	$C_3H_8 + O \rightleftharpoons$ N-$C_3H_7 + OH$		1.900E+05	2.68	15.6	[40, 32]
p8f	$C_3H_8 + OH \rightleftharpoons$ N-$C_3H_7 + H_2O$		1.400E+03	2.66	2.21	[32]
p9f	$C_3H_8 + OH \rightleftharpoons$ I-$C_3H_7 + H_2O$		2.700E+04	2.39	1.65	[32]

Number	Reaction				A	n	E	Ref.
p10f	C_3H_8 + HO_2	⇌	I-C_3H_7 + H_2O_2		9.640E+03	2.60	58.2	[40, 41, 32]
p11f	C_3H_8 + HO_2	⇌	N-C_3H_7 + H_2O_2		4.760E+04	2.55	69	[40, 41, 32]
p12f	I-C_3H_7 + C_3H_8	⇌	N-C_3H_7 + C_3H_8		8.400E-03	4.20	36.3	[40, 42]
p13f^{a,b}	C_3H_6 + H + $M^{(10)}$	⇌	I-C_3H_7 + $M^{(10)}$	k_0	8.700E+42	-7.50	19.8	[32]
				k_∞	1.330E+13	0.00	6.53	
p14f	I-C_3H_7 + O_2	⇌	C_3H_6 + HO_2		1.300E+11	0.00	0	[40, 32]
p15f^{a,b}	N-C_3H_7 + M	⇌	CH_3 + C_2H_4 + M	k_0	5.490E+49	-10.00	150	[40, 32]
				k_∞	1.230E+13	-0.10	126	
p16f^{a,b}	H + C_3H_6 + $M^{(10)}$	⇌	N-C_3H_7 + $M^{(10)}$	k_0	6.260E+38	-6.66	29.3	[40, 32]
				k_∞	1.330E+13	0.00	13.6	
p17f	N-C_3H_7 + O_2	⇌	C_3H_6 + HO_2		9.000E+10	0.00	0	[40, 32]

Units are mol, cm^3, kJ, K.

The backward rates for all reversible reactions can be calculated from thermodynamic data.

^{a}Third-body efficiencies are:

[M1] = 0.75 [AR] + 0.75 [HE] + 2.5 [H2] + 12 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M2] = 0.5 [AR] + 0.5 [HE] + 2.5 [H2] + 12 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M3] = 0.38 [AR] + 0.38 [HE] + 2.5 [H2] + 12 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M4] = 0.2 [AR] + 0.2 [HE] + 2.5 [H2] + 12 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M5] = 0.7 [AR] + 0.7 [HE] + 2.5 [H2] + 16 [H2O] + 1.2 [CO] + 2.4 [CO2] + 1.5 [C2H6] + 1 [other].

[M] = 1 [other].

[M6] = 0.7 [AR] + 0.7 [HE] + 2 [H2] + 6 [H2O] + 1.5 [CO] + 2 [CO2] + 2 [CH4] + 3 [C2H6] + 1 [other].

[M7] = 1.9 [H2] + 12 [H2O] + 2.5 [CO] + 2.5 [CO2] + 1 [other].

[M8] = 2.5 [H2] + 16.3 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M9] = 2.5 [H2] + 12 [H2O] + 1.9 [CO] + 3.8 [CO2] + 1 [other].

[M10] = 0.7 [AR] + 2 [H2] + 6 [H2O] + 1.5 [CO] + 2 [CO2] + 2 [CH4] + 3 [C2H6] + 1 [other].

^{b}Pressure dependent reactions are described by the TROE-formulation [43]. The centering parameters are given by:

$F_{c,8f}$ = 0.5.

$F_{c,14f}$ = 0.265 exp(-T/94 K) + 0.735 exp(-T/1756 K) + exp(-5182 K/T).

$F_{c,47f}$ = 0.63 exp(-T/3315 K) + 0.37 exp(-T/61 K).

$F_{c,48f}$ = 0.38 exp(-T/73 K) + 0.62 exp(-T/1180 K).

$F_{c,81f}$ = 0.16 exp(-T/125 K) + 0.84 exp(-T/2219 K) + exp(-6882 K/T).

$F_{c,86f}$ = 0.832 exp(-T/1203 K).

$F_{c,97f}$ = 0.7.

$F_{c,c6f}$ = 0.5.

$F_{c,c11f}$ = 0.2 exp(-T/1e+15 K).

$F_{c,c15f}$ = 0.5 exp(-T/1e+15 K).

$F_{c,136f}$ = 0.98 exp(-T/1097 K) + 0.02 exp(-T/1097 K) + exp(-6860 K/T).

$F_{c,137f}$ = 0.825 exp(-T/1341 K) + 0.175 exp(-T/60000 K) + exp(-10140 K/T).

$F_{c,p1f}$ = 0.24 exp(-T/1946 K) + 0.76 exp(-T/38 K).

$F_{c,p13f}$ = exp(-T/645.4 K) + exp(-6844.3 K/T).

$F_{c,p15f}$ = 2.17 exp(-T/251 K) + exp(-1185 K/T).

$F_{c,p16f}$ = exp(-T/1310 K) + exp(-48097 K/T).

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