

Reactions considered		A	E	
		mole-cm-	b	cal/mole
		sec		
1	CN+H2=HCN+H	3.60E+08	1.6	3000
2	HCN+O=NCO+H	1.40E+04	2.6	4980
3	HCN+O=CN+OH	2.70E+09	1.6	29200
4	HCN+O=NH+CO	3.50E+03	2.6	4980
5	CN+H2O=HCN+OH	8.00E+12	0	7450
6	HCN+OH=HOCN+H	5.90E+04	2.4	12500
7	HCN+OH=HNCO+H	2.00E-03	4	1000
8	HCN+OH=NH2+CO	7.80E-04	4	4000
9	NCN+H=HCN+N	1.00E+14	0	0
10	NCN+O=CN+NO	1.00E+14	0	0
11	NCN+OH=HCN+NO	5.00E+13	0	0
12	NCN+O2=NO+NCO	1.00E+13	0	0
13	CN+O=CO+N	7.70E+13	0	0
14	CN+OH=NCO+H	6.00E+13	0	0
15	CN+O2=NCO+O	7.50E+12	0	-389
16	CN+CO2=NCO+CO	3.70E+06	2.2	26900
17	CN+NO=NCO+N	1.00E+14	0	42100
18	CN+NO2=NCO+NO	2.40E+13	0	-370
19	CN+HNO=HCN+NO	1.80E+13	0	0
20	CN+HONO=HCN+NO2	1.20E+13	0	0
21	CN+N2O=NCN+NO	3.80E+03	2.6	3700
22	HOCN+H=HNCO+H	2.00E+07	2	2000
23	HOCN+OH=NCO+H2O	6.40E+05	2	2560
24	HOCN+O=NCO+OH	1.50E+04	2.6	4000
25	HNCO+M=CO+NH	1.10E+16	0	86000
	N2 Enhanced by	1.500E+00		
26	HNCO+H=NH2+CO	2.20E+07	1.7	3800
27	HNCO+O=NCO+OH	2.20E+06	2.1	11430
28	HNCO+O=NH+CO2	9.60E+07	1.4	8520
29	HNCO+O=HNO+CO	1.50E+08	1.6	44012
30	HNCO+OH=NCO+H2O	6.40E+05	2	2560
31	HNCO+HO2=NCO+H2O2	3.00E+11	0	29000
32	HNCO+NH=NH2+NCO	3.00E+13	0	23700
33	HNCO+NO2=HNNO+CO2	2.50E+12	0	26200
34	HNCO+CN=HCN+NCO	1.50E+13	0	0
35	NCO+M=N+CO+M	3.10E+16	-0.5	48000
	N2 Enhanced by	1.500E+00		
36	NCO+H=CO+NH	5.00E+13	0	0
37	NCO+O=NO+CO	4.70E+13	0	0
38	NCO+H2=HNCO+H	7.60E+02	3	4000
39	NCO+OH=HCO+NO	5.00E+12	0	15000
40	NCO+O2=NO+CO2	2.00E+12	0	20000
41	NCO+HCO=HNCO+CO	3.60E+13	0	0
42	NCO+N=N2+CO	2.00E+13	0	0
43	NCO+NO=N2O+CO	6.20E+17	-1.7	763

44	NCO+NO=N2+CO2	7.80E+17	-1.7	763
45	NCO+NO2=CO+NO+NO	1.30E+13	0	0
46	NCO+NO2=CO2+N2O	5.40E+12	0	0
47	NCO+HNO=HNCO+NO	1.80E+13	0	0
48	NCO+HONO=HNCO+NO2	3.60E+12	0	0
49	NCO+NCO=CO+CO+N2	1.80E+13	0	0
50	NCO+CN=NCN+CO	1.80E+13	0	0
51	NH2+H=NH+H2	4.00E+13	0	3650
52	NH2+O=HNO+H	6.60E+14	-0.5	0
53	NH2+O=NH+OH	6.80E+12	0	0
54	NH2+OH=NH+H2O	4.00E+06	2	1000
55	NH2+HO2=H2NO+OH	2.50E+13	0	0
56	H2NO+O=NH2+O2	4.00E+13	0	0
57	NH2+NH2=N2H2+H2	8.50E+11	0	0
58	NH2+NH=N2H2+H	5.00E+13	0	0
59	NH2+N=N2+2H	7.20E+13	0	0
60	NH2+NO=NNH+OH	2.80E+13	-0.6	0
61	NH2+NO=N2+H2O	1.30E+16	-1.3	0
	Declared duplicate reaction...			
62	NH2+NO=N2+H2O	2.80E+13	-0.6	0
	Declared duplicate reaction...			
63	NH2+NO2=N2O+H2O	3.20E+18	-2.2	0
64	NH+H=N+H2	3.00E+13	0	0
65	NH+O=NO+H	9.20E+13	0	0
66	NH+OH=HNO+H	2.00E+13	0	0
67	NH+OH=N+H2O	5.00E+11	0.5	2000
68	NH+O2=HNO+O	4.60E+05	2	6500
69	NH+O2=NO+OH	1.30E+06	1.5	100
70	NH+N=N2+H	3.00E+13	0	0
71	NH+NH=N2+2H	2.50E+13	0	0
72	NH+NO=N2O+H	2.90E+14	-0.4	0
	Declared duplicate reaction...			
73	NH+NO=N2O+H	2.20E+13	-0.2	0
	Declared duplicate reaction...			
74	NH+NO=N2+OH	2.20E+13	-0.2	0
75	NH+NO2=N2O+OH	1.00E+13	0	0
76	N+OH=NO+H	3.80E+13	0	0
77	N+O2=NO+O	6.40E+09	1	6280
78	N+NO=N2+O	3.30E+12	0.3	0
79	N+CO2=NO+CO	1.90E+11	0	3400
80	NO+OH(+M)=HONO(+M)	2.00E+12	-0.1	-721
	Low pressure limit:	0.50E+24	-2.51	-68
	N2 Enhanced by 1.000E+00			
	H2O Enhanced by 5.000E+00			
81	NO+HO2=NO2+OH	2.10E+12	0	-480
82	HCO+NO=CO+HNO	7.20E+12	0	0
83	NO2(+M)=NO+O(+M)	1.40E+14	0	70950
	Low pressure limit:	1.10E+16	0	66000

84	NO ₂ +H=NO+OH	3.50E+14	0	1500
85	NO ₂ +O=NO+O ₂	1.00E+13	0	600
86	NO ₂ +NO ₂ =NO+NO+O ₂	1.60E+12	0	26123
87	CO+NO ₂ =CO ₂ +NO	9.00E+13	0	33800
88	HCO+NO ₂ =CO+HONO	2.10E+00	3.3	2350
89	HCO+NO ₂ =H+CO ₂ +NO	8.40E+15	-0.8	1930
90	NO ₃ =NO+O ₂	2.50E+06	0	12000
91	NO ₃ +H=NO ₂ +OH	6.00E+13	0	0
92	NO ₃ +O=NO ₂ +O ₂	1.00E+13	0	0
93	NO ₃ +OH=NO ₂ +HO ₂	1.40E+13	0	0
94	NO ₃ +HO ₂ =NO ₂ +O ₂ +OH	1.40E+12	0	-338
95	NO ₃ +NO ₂ =NO+NO ₂ +O ₂	8.90E+05	1.6	2047
96	NO ₃ +NO ₃ =NO ₂ +NO ₂ +O ₂	5.10E+11	0	6750
97	HNO(+M)=H+NO(+M)	1.20E+16	-0.4	49490
	Low pressure limit:	1.50E+16	0	48680
	H ₂ O	Enhanced by	1.000E+01	
	O ₂	Enhanced by	2.000E+00	
	N ₂	Enhanced by	2.000E+00	
	H ₂	Enhanced by	2.000E+00	
98	HNO+H=NO+H ₂	4.40E+11	0.7	650
99	HNO+O=NO+OH	1.00E+13	0	0
100	HNO+OH=NO+H ₂ O	3.60E+13	0	0
101	HNO+O ₂ =NO+HO ₂	1.00E+13	0	25000
102	HNO+NO=N ₂ O+OH	2.00E+12	0	26000
103	HNO+NO ₂ =HONO+NO	6.00E+11	0	2000
104	HNO+HNO=N ₂ O+H ₂ O	4.00E+12	0	5000
105	H ₂ NO+M=HNO+H+M	5.00E+16	0	50000
106	H ₂ NO+H=HNO+H ₂	3.00E+07	2	2000
107	H ₂ NO+H=NH ₂ +OH	5.00E+13	0	0
108	H ₂ NO+O=HNO+OH	3.00E+07	2	2000
109	H ₂ NO+OH=HNO+H ₂ O	2.00E+07	2	1000
110	H ₂ NO+NO=HNO+HNO	2.00E+07	2	13000
111	HONO+H=NO ₂ +H ₂	1.20E+13	0	7350
112	HONO+O=NO ₂ +OH	1.20E+13	0	6000
113	HONO+OH=NO ₂ +H ₂ O	1.30E+10	1	135
114	N ₂ H ₂ +M=NNH+H+M	5.00E+16	0	50000
	H ₂ O	Enhanced by	1.500E+01	
	H ₂	Enhanced by	2.000E+00	
	N ₂	Enhanced by	2.000E+00	
	O ₂	Enhanced by	2.000E+00	
115	N ₂ H ₂ +H=NNH+H ₂	5.00E+13	0	1000
116	N ₂ H ₂ +O=NH ₂ +NO	1.00E+13	0	1000
117	N ₂ H ₂ +O=NNH+OH	2.00E+13	0	1000
118	N ₂ H ₂ +OH=NNH+H ₂ O	1.00E+13	0	1000
119	N ₂ H ₂ +NH=NNH+NH ₂	1.00E+13	0	1000
120	N ₂ H ₂ +NO=N ₂ O+NH ₂	3.00E+12	0	0
121	NNH=N ₂ +H	1.00E+06	0	0
122	NNH+H=N ₂ +H ₂	1.00E+14	0	0

123	NNH+O=N2O+H	1.00E+14	0	0
124	NNH+OH=N2+H2O	5.00E+13	0	0
125	NNH+NH=N2+NH2	5.00E+13	0	0
126	NNH+NO=N2+HNO	5.00E+13	0	0
127	HNNO+M=N2O+H+M	2.20E+15	0	21600
128	HNNO+M=N2+OH+M	1.00E+15	0	25600
129	HNNO+H=N2O+H2	2.00E+13	0	0
130	HNNO+H=NNH+OH	1.00E+13	0	0
131	HNNO+O=N2O+OH	2.00E+13	0	0
132	HNNO+O=NNH+O2	1.00E+13	0	0
133	HNNO+OH=N2O+H2O	2.00E+13	0	0
134	HNNO+OH=NNH+HO2	1.00E+13	0	0
135	HNNO+NO=N2O+HNO	1.00E+12	0	0
136	HNNO+NO=NNH+NO2	3.20E+12	0	270
137	HNNO+NO2=NNH+NO3	1.00E+13	0	0
138	HNNO+NO2=N2O+HONO	1.00E+12	0	0
139	N2O(+M)=N2+O(+M)	1.30E+11	0	59574
	Low pressure limit:	4.00E+14	0	56100
	N2 Enhanced by	1.700E+00		
	O2 Enhanced by	1.400E+00		
	CO2 Enhanced by	3.000E+00		
	H2O Enhanced by	1.200E+01		
140	N2O+H=N2+OH	3.30E+10	0	4729
	Declared duplicate reaction...			
141	N2O+H=N2+OH	4.40E+14	0	19254
	Declared duplicate reaction...			
142	N2O+O=NO+NO	2.90E+13	0	23150
143	N2O+O=N2+O2	1.40E+12	0	10800
144	N2O+OH=N2+HO2	2.00E+12	0	40000
145	N2O+CO=N2+CO2	2.70E+11	0	20237
146	H+O2=O+OH	1.70E+14	0	16132
147	O+H2=OH+H	5.00E+04	2.7	6290
148	OH+H2=H2O+H	2.20E+08	1.5	3430
149	OH+OH=H2O+O	9.20E+09	0.8	-68
150	H+OH+M=H2O+M	8.40E+21	-2	0
	N2 Enhanced by	2.600E+00		
	H2O Enhanced by	1.650E+01		
151	O+O+M=O2+M	1.90E+13	0	-1788
	H2O Enhanced by	1.860E+01		
152	H+H+M=H2+M	6.90E+17	-1	0
	N2 Enhanced by	0.000E+00		
	H2O Enhanced by	1.500E+01		
153	H+H+N2=H2+N2	5.40E+18	-1.3	0
154	H+O+M=OH+M	4.70E+18	-1	0
	H2O Enhanced by	1.860E+01		
155	H+O2+M=HO2+M	1.50E+15	0	-1000
	H2O Enhanced by	0.000E+00		
	N2 Enhanced by	0.000E+00		

156	H+O2+N2=HO2+N2	6.70E+19	-1.4	0
157	H+O2+H2O=HO2+H2O	2.40E+16	0	-1000
158	HO2+H=H2+O2	6.30E+13	0	2126
159	HO2+H=OH+OH	1.70E+14	0	875
160	HO2+O=OH+O2	1.80E+13	0	-400
161	HO2+OH=H2O+O2	2.00E+13	0	0
162	HO2+HO2=H2O2+O2	1.30E+11	0	-1630
	Declared duplicate reaction...			
163	HO2+HO2=H2O2+O2	4.20E+14	0	11980
	Declared duplicate reaction...			
164	H2O2+M=OH+OH+M	1.30E+33	-4.9	53200
	H2O Enhanced by 1.860E+01			
165	H2O2+H=H2O+OH	2.40E+13	0	3974
166	H2O2+H=HO2+H2	4.80E+13	0	7950
167	H2O2+O=HO2+OH	9.60E+06	2	2000
168	H2O2+OH=H2O+HO2	1.00E+12	0	0
	Declared duplicate reaction...			
169	H2O2+OH=H2O+HO2	5.80E+14	0	9560
	Declared duplicate reaction...			
170	CO+O+M=CO2+M	6.20E+14	0	3000
	H2O Enhanced by 1.860E+01			
171	CO+OH=CO2+H	1.50E+07	1.3	-765
172	CO+O2=CO2+O	2.50E+12	0	47700
173	CO+HO2=CO2+OH	1.50E+14	0	23650
174	HCO+M=H+CO+M	1.90E+17	-1	17020
	N2 Enhanced by 1.500E+00			
	O2 Enhanced by 1.500E+00			
	CO Enhanced by 1.900E+00			
	CO2 Enhanced by 3.000E+00			
	H2O Enhanced by 5.000E+00			
175	HCO+H=CO+H2	1.20E+13	0.3	0
176	HCO+O=CO+OH	3.00E+13	0	0
177	HCO+O=CO2+H	3.00E+13	0	0
178	HCO+OH=CO+H2O	1.10E+14	0	0
179	HCO+O2=CO+HO2	7.60E+12	0	400
180	HCNO+H=HCN+OH	1.00E+14	0	12000