Number	Reaction			A	n	E	Ref.
N1f	$O + N_2$	$\rightleftharpoons$	$NO + N$	1.470E+13	0.30	315	[1]
N2f	$N + O_2$	$\rightleftharpoons$	$NO + O$	6.400E+09	1.00	26.3	[1]
N3f	$N + OH$	$\rightleftharpoons$	$NO + H$	3.800E+13	0.00	0	[1]
N4f	$N_2 + CH$	$\rightleftharpoons$	$HCN + N$	4.400E+12	0.00	92	[1]
N5f	$HCN + O$	$\rightleftharpoons$	$NCO + H$	1.400E+06	2.10	25.6	[1]
N6f[a]	$NCO + M^{(102)}$	$\rightleftharpoons$	$N + CO + M^{(102)}$	3.100E+16	-0.50	201	[1]
N7f	$NCO + H$	$\rightleftharpoons$	$CO + NH$	5.000E+13	0.00	0	[1]
N8f	$NCO + O$	$\rightleftharpoons$	$NO + CO$	4.700E+13	0.00	0	[1]
N9f	$NCO + H_2$	$\rightleftharpoons$	$HNCO + H$	7.600E+02	3.00	16.7	[1]
N100f	$HCCO + NO$	$\rightleftharpoons$	$HNCO + CO$	2.350E+13	0.00	0	[2]
N10f[a]	$HNCO + M^{(102)}$	$\rightleftharpoons$	$NH + CO + M^{(102)}$	1.100E+16	0.00	360	[1]
N11f	$HNCO + H$	$\rightleftharpoons$	$NH_2 + CO$	2.200E+07	1.70	15.9	[1]
N12f	$HNCO + O$	$\rightleftharpoons$	$NCO + OH$	2.200E+06	2.11	47.9	[1]
N13f	$HNCO + O$	$\rightleftharpoons$	$NH + CO_2$	9.600E+07	1.41	35.7	[1]
N14f	$HNCO + OH$	$\rightleftharpoons$	$NCO + H_2O$	6.400E+05	2.00	10.7	[1]
N15f	$CN + H_2$	$\rightleftharpoons$	$HCN + H$	3.600E+08	1.55	12.6	[1]
N16f	$CN + H_2O$	$\rightleftharpoons$	$HCN + OH$	7.800E+12	0.00	31.2	[1]
N17f	$CN + OH$	$\rightleftharpoons$	$NCO + H$	4.200E+13	0.00	0	[1]
N18f	$CN + O_2$	$\rightleftharpoons$	$NCO + O$	7.200E+12	0.00	-1.75	[1]
N19f	$NH + H$	$\rightleftharpoons$	$N + H_2$	1.000E+13	0.00	0	[1]
N20f	$NH + O$	$\rightleftharpoons$	$NO + H$	9.200E+13	0.00	0	[1]
N21f	$NH + OH$	$\rightleftharpoons$	$HNO + H$	4.000E+13	0.00	0	[1]
N22f	$NH + OH$	$\rightleftharpoons$	$N + H_2O$	5.000E+11	0.50	8.37	[1]
N23f	$NH + O_2$	$\rightleftharpoons$	$HNO + O$	4.600E+05	2.00	27.2	[1]
N24f	$NH + NO$	$\rightleftharpoons$	$N_2O + H$	3.200E+14	-0.45	0	[1]
N25f	$NH + NO$	$\rightleftharpoons$	$N_2 + OH$	2.200E+13	-0.23	0	[1]
N26f	$NH_2 + H$	$\rightleftharpoons$	$NH + H_2$	4.000E+13	0.00	15.3	[1]
N27f	$NH_2 + O$	$\rightleftharpoons$	$HNO + H$	9.900E+14	-0.50	0	[1]
N28f	$NH_2 + OH$	$\rightleftharpoons$	$NH + H_2O$	4.000E+06	2.00	4.19	[1]
N29f	$NH_2 + NO$	$\rightleftharpoons$	$N_2 + H_2O$	2.000E+20	-2.60	3.87	[1]
N30f	$NH_2 + NO$	$\rightleftharpoons$	$N_2H + OH$	9.300E+11	0.00	0	[1]
N31f[a]	$NH_3 + M$	$\rightleftharpoons$	$NH_2 + H + M$	2.200E+16	0.00	391	[1]
N32f	$NH_3 + H$	$\rightleftharpoons$	$NH_2 + H_2$	6.400E+05	2.39	42.6	[1]
N33f	$NH_3 + O$	$\rightleftharpoons$	$NH_2 + OH$	9.400E+06	1.94	27.1	[1]
N34f	$NH_3 + OH$	$\rightleftharpoons$	$NH_2 + H_2O$	2.040E+06	2.04	2.37	[1]
N35f	N_2H	$\rightleftharpoons$	$N_2 + H$	1.000E+08	0.00	0	[1]

Number	Reaction			A	n	E	Ref.
N36f	$N_2H + H$	$\rightleftharpoons$	$N_2 + H_2$	1.000E+14	0.00	0	[1]
N37f	$N_2H + O$	$\rightleftharpoons$	$N_2O + H$	1.000E+14	0.00	0	[1]
N38f	$N_2H + OH$	$\rightleftharpoons$	$N_2 + H_2O$	5.000E+13	0.00	0	[1]
N39f[a]	$HNO + M^{(101)}$	$\rightleftharpoons$	$H + NO + M^{(101)}$	1.500E+16	0.00	204	[1]
N40f	$HNO + H$	$\rightleftharpoons$	$NO + H_2$	4.400E+11	0.72	2.72	[1]
N41f	$HNO + OH$	$\rightleftharpoons$	$NO + H_2O$	3.600E+13	0.00	0	[1]
N42	$NO + CH_3$	$\rightarrow$	$HCN + H_2O$	8.300E+11	0.00	67.3	[1]
N43f	$NO + T\text{-}CH_2$	$\rightleftharpoons$	$HNCO + H$	2.900E+12	0.00	-2.5	[1]
N44f	$NO + CH$	$\rightleftharpoons$	$HCN + O$	1.100E+14	0.00	0	[1]
N45f	N_2O	$\rightleftharpoons$	$N_2 + O$ k_0	2.000E+14	0.00	237	[1]
			k_∞	8.000E+11	0.00	262	
N46f	$N_2O + H$	$\rightleftharpoons$	$N_2 + OH$	2.230E+14	0.00	70.1	[1]
N47f	$N_2O + O$	$\rightleftharpoons$	2 NO	2.900E+13	0.00	96.9	[1]
N48f	$N_2O + OH$	$\rightleftharpoons$	$N_2 + HO_2$	2.000E+12	0.00	41.8	[1]
N49f[a]	$NO_2 + M$	$\rightleftharpoons$	$NO + O + M$	1.000E+16	0.00	276	[1]
N50f	$NO + HO_2$	$\rightleftharpoons$	$NO_2 + OH$	2.100E+12	0.00	-2.01	[1]
N51f	$NO_2 + H$	$\rightleftharpoons$	$NO + OH$	3.500E+14	0.00	6.28	[1]
N52f	$NO_2 + O$	$\rightleftharpoons$	$NO + O_2$	1.000E+13	0.00	2.51	[1]

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:

[M102] = 1.5 [N2] + 1.5 [O2] + 18.6 [H2O] + 1 [other].

[M] = 1 [other].

[M101] = 2 [N2] + 2 [O2] + 2 [H2] + 10 [H2O] + 1 [other].

[b]Pressure dependent reactions are described by the TROE-formulation [3]. The centering parameters are given by:

$F_{c,N45f} = 1$.

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