

	prod	prod.labs
15	6.882722e+07	BrO+hv = Br+O(3P)
4	1.540409e+07	BrO+NO = Br+NO2
11	3.650675e+06	O(3P)+BrO = O2+Br
3	2.042247e+06	BrO+ClO = Br+OCIO
2	1.279890e+06	BrO+ClO = Br+Cl+O2
17	7.211553e+05	HOBr+hv = OH+Br
16	4.488955e+05	BrONO2+hv = Br+NO3
14	2.632781e+05	BrCl+hv = Br+Cl
6	1.851551e+05	BrO+OH = Br+HO2
1	6.604931e+04	BrO+BrO = Br+Br+O2
5	6.604931e+04	BrO+BrO = Br+Br+O2
13	3.102973e+03	OH+HBr = H2O+Br
12	1.179948e+02	O(3P)+HBr = OH+Br
18	2.331900e+01	MeBr+hv = Br+H
9	1.973200e+01	MeBr+OH = Br+H2O
7	2.634170e+00	MeBr+Cl = Br+HCl
8	1.719143e-01	MeBr+O(1D)= Br+OH
10	1.449085e-01	O(1D)+HBr = OH+Br

	loss	loss.labs
4	9.294910e+07	Br+O3 = BrO+O2
3	1.842752e+03	Br+HO2 = HBr+O2
2	1.406029e+03	Br+HCHO = HBr+CO+HO2
1	9.970710e+02	Br+Cl2O2= BrCl+Cl+O2
6	1.329375e+02	NO3+Br = BrO+NO2
5	1.262128e+00	Br+OCIO = BrO+ClO

	prod	prod.labs
2	262312.280	BrO+ClO = BrCl+O2
1	997.071	Br+Cl2O2= BrCl+Cl+O2

	loss	loss.labs
1	263278.1	BrCl+hv = Br+Cl

	prod	prod.labs
1	9.294910e+07	Br+O3 = BrO+O2
4	7.920210e+04	BrONO2+hv = BrO+NO2
3	1.329375e+02	NO3+Br = BrO+NO2
2	1.262128e+00	Br+OCIO = BrO+ClO

	loss	loss.labs
12	68827219.53	BrO+hv = Br+O(3P)
7	15404087.54	BrO+NO = Br+NO2
11	3650675.34	O(3P)+BrO = O2+Br
4	2042246.61	BrO+ClO = Br+OCLO
3	1279889.89	BrO+ClO = Br+Cl+O2
6	721165.84	BrO+HO2 = HOBr+O2
1	528130.34	BrO+NO2 = BrONO2+m
5	262312.28	BrO+ClO = BrCl+O2
9	185155.12	BrO+OH = Br+HO2
2	66049.31	BrO+BrO = Br+Br+O2
8	66049.31	BrO+BrO = Br+Br+O2
10	0.00	BrO+HO2 = HBr+O3

	prod	prod.labs
1	528130.3	BrO+NO2 = BrONO2+m

	loss	loss.labs
2	4.488955e+05	BrONO2+hv = Br+NO3
3	7.920210e+04	BrONO2+hv = BrO+NO2
1	7.705235e-02	BrONO2 wet dep

	loss	loss.labs
1	5697.285	OH+C2H6 = H2O+EtOO

	loss	loss.labs
1	968.5028	OH+C3H8 = i-PrOO+H2O
2	166.4031	OH+C3H8 = n-PrOO+H2O

	loss	loss.labs
5	702.208976	OH+C5H8 = ISO2+
2	1.686007	O3+C5H8 = HO2+OH
3	1.686007	O3+C5H8 = MACR+HCHO+MACRO2+MeCO3
4	1.686007	O3+C5H8 = MeOO+HCOOH+CO+H2O2
1	1.242635	NO3+C5H8 = ISON+

	loss	loss.labs
2	439.01007	CF ₂ Cl ₂ +hν = Cl+Cl
1	33.33701	CF ₂ Cl ₂ +O(1D)= Cl+ClO

	loss	loss.labs
2	721.65809	$\text{CFCl}_3 + h\nu = \text{Cl} + \text{Cl} + \text{Cl}$
1	11.67973	$\text{CFCl}_3 + \text{O}(1\text{D}) = \text{Cl} + \text{Cl} + \text{ClO}$

	prod	prod.labs
1	0.003258078	MeCHO+hv = CH4+CO

	loss	loss.labs
5	434891.329	OH+CH4 = H2O+MeOO
3	168439.371	O(1D)+CH4 = OH+MeOO
1	151801.781	Cl+CH4 = HCl+MeOO
4	45432.795	O(1D)+CH4 = HCHO+HO2+HO2
2	11572.171	O(1D)+CH4 = HCHO+H2
6	4318.762	CH4+hv = MeOO+H

35	2.632781e+05	$\text{BrCl} + h\nu = \text{Br} + \text{Cl}$
16	2.602017e+04	$\text{ClO} + \text{MeOO} = \text{Cl} + \text{HCHO} + \text{HO}_2$
11	1.862905e+04	$\text{Cl} + \text{ClONO}_2 = \text{Cl} + \text{Cl} + \text{NO}_3$
21	1.862905e+04	$\text{Cl} + \text{ClONO}_2 = \text{Cl} + \text{Cl} + \text{NO}_3$
2	1.754615e+04	$\text{HOCl} + \text{HCl} = \text{Cl} + \text{Cl} + \text{H}_2\text{O}$
5	1.754615e+04	$\text{HOCl} + \text{HCl} = \text{Cl} + \text{Cl} + \text{H}_2\text{O}$
18	1.130688e+04	$\text{ClO} + \text{NO}_3 = \text{Cl} + \text{O}_2 + \text{NO}_2$
36	5.969791e+03	$\text{HCl} + h\nu = \text{H} + \text{Cl}$
1	3.989014e+03	$\text{ClONO}_2 + \text{HCl} = \text{Cl} + \text{Cl} + \text{HONO}_2$
4	3.989014e+03	$\text{ClONO}_2 + \text{HCl} = \text{Cl} + \text{Cl} + \text{HONO}_2$
13	2.342167e+03	$\text{ClO} + \text{ClO} = \text{Cl} + \text{Cl} + \text{O}_2$
14	2.342167e+03	$\text{ClO} + \text{ClO} = \text{Cl} + \text{Cl} + \text{O}_2$
23	2.342167e+03	$\text{ClO} + \text{ClO} = \text{Cl} + \text{Cl} + \text{O}_2$
24	2.342167e+03	$\text{ClO} + \text{ClO} = \text{Cl} + \text{Cl} + \text{O}_2$
15	2.215320e+03	$\text{ClO} + \text{ClO} = \text{Cl} + \text{OClO}$
10	1.149110e+03	$\text{Cl} + \text{Cl}_2\text{O}_2 = \text{Cl} + \text{Cl} + \text{Cl}$
20	1.149110e+03	$\text{Cl} + \text{Cl}_2\text{O}_2 = \text{Cl} + \text{Cl} + \text{Cl}$
25	1.149110e+03	$\text{Cl} + \text{Cl}_2\text{O}_2 = \text{Cl} + \text{Cl} + \text{Cl}$
6	9.970710e+02	$\text{Br} + \text{Cl}_2\text{O}_2 = \text{BrCl} + \text{Cl} + \text{O}_2$
12	9.335213e+02	$\text{Cl} + \text{HOCl} = \text{Cl} + \text{Cl} + \text{OH}$
22	9.335213e+02	$\text{Cl} + \text{HOCl} = \text{Cl} + \text{Cl} + \text{OH}$
28	8.879137e+02	$\text{O}(3\text{P}) + \text{HCl} = \text{OH} + \text{Cl}$

	loss	loss.labs
11	2.820030e+08	Cl+O3 = ClO+O2
1	1.518018e+05	Cl+CH4 = HCl+MeOO
8	3.487372e+04	Cl+HO2 = HCl+O2
6	3.045455e+04	Cl+HCHO = HCl+CO+HO2
3	1.862905e+04	Cl+ClONO2 = Cl+Cl+NO3
7	7.115278e+03	Cl+HO2 = ClO+OH
4	5.528484e+03	Cl+H2 = HCl+H
13	2.795867e+03	Cl+MeOOH= HCl+MeOO
2	1.149110e+03	Cl+Cl2O2= Cl+Cl+Cl
9	9.335213e+02	Cl+HOCl = Cl+Cl+OH
5	9.887910e+01	Cl+H2O2 = HCl+HO2
12	7.225248e+01	Cl+OCIO = ClO+ClO
10	3.326133e+01	Cl+NO3 = ClO+NO2
14	2.634170e+00	MeBr+Cl = Br+HCl

	prod	prod.labs
1	395369.9	ClO+ClO = Cl2O2+m

	loss	loss.labs
4	303032.877	Cl ₂ O ₂ +hv = Cl+Cl+O ₂
1	90088.076	Cl ₂ O ₂ +m = ClO+ClO
3	1149.110	Cl+Cl ₂ O ₂ = Cl+Cl+Cl
2	997.071	Br+Cl ₂ O ₂ = BrCl+Cl+O ₂

	prod	prod.labs
6	2.820030e+08	$\text{Cl} + \text{O}_3 = \text{ClO} + \text{O}_2$
18	2.042383e+06	$\text{OCIO} + h\nu = \text{O}(3\text{P}) + \text{ClO}$
17	3.427276e+05	$\text{ClONO}_2 + h\nu = \text{ClO} + \text{NO}_2$
14	9.150956e+04	$\text{O}(3\text{P}) + \text{HOCl} = \text{OH} + \text{ClO}$
1	9.008808e+04	$\text{Cl}_2\text{O}_2 + m = \text{ClO} + \text{ClO}$
2	9.008808e+04	$\text{Cl}_2\text{O}_2 + m = \text{ClO} + \text{ClO}$
11	7.680637e+04	$\text{O}(3\text{P}) + \text{ClONO}_2 = \text{ClO} + \text{NO}_3$
12	8.855038e+03	$\text{OH} + \text{HOCl} = \text{ClO} + \text{H}_2\text{O}$
4	7.115278e+03	$\text{Cl} + \text{HO}_2 = \text{ClO} + \text{OH}$
16	9.683281e+02	$\text{OCIO} + \text{NO} = \text{NO}_2 + \text{ClO}$
13	1.720807e+02	$\text{O}(1\text{D}) + \text{HCl} = \text{H} + \text{ClO}$
7	7.225248e+01	$\text{Cl} + \text{OCIO} = \text{ClO} + \text{ClO}$
9	7.225248e+01	$\text{Cl} + \text{OCIO} = \text{ClO} + \text{ClO}$
8	3.333701e+01	$\text{CF}_2\text{Cl}_2 + \text{O}(1\text{D}) = \text{Cl} + \text{ClO}$
5	3.326133e+01	$\text{Cl} + \text{NO}_3 = \text{ClO} + \text{NO}_2$
15	1.733241e+01	$\text{O}(3\text{P}) + \text{OCIO} = \text{O}_2 + \text{ClO}$
10	1.167973e+01	$\text{CFCl}_3 + \text{O}(1\text{D}) = \text{Cl} + \text{Cl} + \text{ClO}$
3	1.262128e+00	$\text{Br} + \text{OCIO} = \text{BrO} + \text{ClO}$

	loss	loss.labs
13	1.648848e+08	ClO+NO = Cl+NO2
19	1.068668e+08	O(3P)+ClO = Cl+O2
11	2.351993e+06	ClO+HO2 = HOCl+O2
2	2.069239e+06	ClO+NO2 = ClONO2+m
5	2.042247e+06	BrO+ClO = Br+OClO
21	1.704804e+06	OH+ClO = HO2+Cl
4	1.279890e+06	BrO+ClO = Br+Cl+O2
1	3.953699e+05	ClO+ClO = Cl2O2+m
3	3.953699e+05	ClO+ClO = Cl2O2+m
6	2.623123e+05	BrO+ClO = BrCl+O2
20	1.168776e+05	OH+ClO = HCl+O2
12	2.602017e+04	ClO+MeOO = Cl+HCHO+HO2
14	1.130688e+04	ClO+NO3 = Cl+O2+NO2
7	2.342167e+03	ClO+ClO = Cl+Cl+O2
8	2.342167e+03	ClO+ClO = Cl+Cl+O2
16	2.342167e+03	ClO+ClO = Cl+Cl+O2
17	2.342167e+03	ClO+ClO = Cl+Cl+O2
9	2.215320e+03	ClO+ClO = Cl+OClO
18	2.215320e+03	ClO+ClO = Cl+OClO
10	0.000000e+00	ClO+HO2 = HCl+O3
15	0.000000e+00	ClO+NO3 = OClO+NO2

	prod	prod.labs
1	2069239	ClO+NO2 = ClONO2+m

	loss	loss.labs
7	1.588710e+06	ClONO2+hv = Cl+NO3
8	3.427276e+05	ClONO2+hv = ClO+NO2
5	7.680637e+04	O(3P)+ClONO2 = ClO+NO3
6	2.264582e+04	OH+ClONO2 = HOCl+NO3
4	1.862905e+04	Cl+ClONO2 = Cl+Cl+NO3
2	1.453354e+04	ClONO2+H2O = HOCl+HONO2
3	3.989014e+03	ClONO2+HCl = Cl+Cl+HONO2
1	1.445191e+00	ClONO2 wet dep

	prod	prod.labs
8	3.727494e+05	HCHO+hv = H2+CO
11	2.431287e+05	HCHO+hv = HO2+HO2+CO
10	2.142507e+05	OH+HCHO = H2O+HO2+CO
15	1.941004e+05	CO2+hv = CO+O(3P)
5	5.879558e+04	O(3P)+HCHO = OH+CO+HO2
2	3.045455e+04	Cl+HCHO = HCl+CO+HO2
18	6.589094e+03	MGLY+hv = MeCO3+CO+HO2
6	3.755032e+03	OH+MGLY = MeCO3+CO
1	1.406029e+03	Br+HCHO = HBr+CO+HO2
12	1.304542e+03	MeCHO+hv = MeOO+HO2+CO
7	2.538470e+02	OH+NALD = HCHO+CO+NO2
20	1.044324e+02	EtCHO+hv = EtOO+HO2+CO
17	7.915685e+01	MACROOH+hv = HACET+CO+MGLY+HCHO
21	5.811770e+01	MACR+hv = MeCO3+HCHO+CO+HO2
19	4.188680e+01	NALD+hv = HCHO+CO+NO2+HO2
13	3.424612e+00	O3+MACR = MGLY+HCOOH+HO2+CO
14	3.424612e+00	O3+MACR = MGLY+HCOOH+HO2+CO
4	2.299851e+00	NO3+HCHO = HONO2+HO2+CO
9	1.686007e+00	O3+C5H8 = MeOO+HCOOH+CO+H2O2
3	4.212071e-03	NO3+MGLY = MeCO3+CO+HONO2
16	3.258078e-03	MeCHO+hv = CH4+CO

	loss	loss.labs
2	1921061	OH+CO = H+CO2
1	0	CO dry dep

	prod	prod.labs
1	105.3203017	n-PrOO+NO = EtCHO+HO2+NO2
3	55.8689474	OH+n-PrOOH= EtCHO+H2O+OH
4	23.8360857	n-PrOOH+hv = EtCHO+HO2+OH
2	0.1217169	n-PrOO+NO3 = EtCHO+HO2+NO2

	loss	loss.labs
3	104.88967237	OH+EtCHO= H2O+EtCO3
4	104.43240841	EtCHO+hv = EtOO+HO2+CO
2	0.01584353	NO3+EtCHO= HONO2+EtCO3
1	0.00000000	EtCHOdry dep

	prod	prod.labs
3	104.88967237	OH+EtCHO= H2O+EtCO3
4	6.55083697	PPAN+hv = EtCO3+NO2
1	0.01644888	PPAN+m = EtCO3+NO2
2	0.01584353	NO3+EtCHO= HONO2+EtCO3

	loss	loss.labs
2	73.896727048	EtCO3+NO = EtOO+CO2+NO2
4	21.389496177	HO2+EtCO3= O2+EtCO3H
1	10.316453872	EtCO3+NO2 = PPAN+m
5	3.791774322	HO2+EtCO3= O3+EtCO2H
3	0.001904471	EtCO3+NO3 = EtOO+CO2+NO2

	prod	prod.labs
3	5.697285e+03	OH+C2H6 = H2O+EtOO
4	3.443936e+02	OH+EtOOH= H2O+EtOO
5	1.044324e+02	EtCHO+hv = EtOO+HO2+CO
1	7.389673e+01	EtCO3+NO = EtOO+CO2+NO2
2	1.904471e-03	EtCO3+NO3 = EtOO+CO2+NO2

	loss	loss.labs
2	4881.354041	EtOO+NO = MeCHO+HO2+NO2
4	1086.649970	HO2+EtOO = EtOOH
1	61.104853	EtOO+MeCO3= MeCHO+HO2+MeOO
3	1.886407	EtOO+NO3 = MeCHO+HO2+NO2

	prod	prod.labs
1	1086.65	HO2+EtOO = EtOOH

	loss	loss.labs
5	6.150086e+02	OH+EtOOH= H2O+MeCHO+OH
3	3.763770e+02	EtOOH+hv = MeCHO+HO2+OH
4	3.443936e+02	OH+EtOOH= H2O+EtOO
2	1.515018e+01	EtOOH wet dep
1	9.912028e-06	EtOOH dry dep

	prod	prod.labs
6	2.326826e+08	O(3P)+OH = O2+H
4	1.921061e+06	OH+CO = H+CO2
10	5.052630e+05	H2O+hv = OH+H
7	1.608911e+05	OH+H2 = H2O+H
8	1.608911e+05	OH+H2 = H2O+H
2	7.705372e+04	O(1D)+H2 = OH+H
5	2.381810e+04	O(3P)+H2 = OH+H
9	5.969791e+03	HCl+hv = H+Cl
1	5.528484e+03	Cl+H2 = HCl+H
11	4.318762e+03	CH4+hv = MeOO+H
3	1.720807e+02	O(1D)+HCl = H+ClO
12	2.331900e+01	MeBr+hv = Br+H

	loss	loss.labs
1	1.975900e+08	H+O2 = HO2+m
6	3.623277e+07	H+O3 = OH+O2
4	4.020806e+05	H+HO2 = OH+OH
2	3.853272e+04	H+HO2 = H2+O2
3	9.046813e+03	H+HO2 = O(3P)+H2O
5	8.455189e+03	H+NO2 = OH+NO

	prod	prod.labs
3	372749.42	HCHO+hv = H2+CO
1	38532.72	H+HO2 = H2+O2
2	11572.17	O(1D)+CH4 = HCHO+H2

	loss	loss.labs
4	160891.093	OH+H2 = H2O+H
5	160891.093	OH+H2 = H2O+H
2	77053.718	O(1D)+H2 = OH+H
3	23818.095	O(3P)+H2 = OH+H
1	5528.484	Cl+H2 = HCl+H

	prod	prod.labs
3	1.545301e+05	HO2+HO2 = H2O2
1	2.146414e+04	HO2+HO2 = H2O2+O2
2	1.754377e+03	OH+OH = H2O2+m
4	1.686007e+00	O3+C5H8 = MeOO+HCOOH+CO+H2O2

	loss	loss.labs
4	1.408598e+05	H2O2+hv = OH+OH
6	5.723229e+04	OH+H2O2 = HO2+H2O
2	2.207011e+03	H2O2 wet dep
5	3.270802e+02	O(3P)+H2O2 = OH+HO2
3	9.887910e+01	Cl+H2O2 = HCl+HO2
1	1.140158e-03	H2O2 dry dep

prod	prod.labs
737.8849402	OH+MPAN = HACET+NO2
468.0949437	NO+MACRO2 = NO2+MeCO3+HACET+CO
175.3588837	OH+ISON = HACET+NALD
79.1568534	MACROOH+hv = HACET+CO+MGLY+HCHO
0.3765767	MACRO2+MACRO2 = HACET+MGLY+HCHO+CO

	loss	loss.labs
3	8.675150e+03	OH+HACET= MGLY+HO2
2	2.392074e+02	HACET wet dep
4	2.276743e+02	HACET+hv = MeCO3+HCHO+HO2
1	3.885616e-05	HACET dry dep

	prod	prod.labs
2	1.842752e+03	Br+HO2 = HBr+O2
1	1.406029e+03	Br+HCHO = HBr+CO+HO2
4	3.622712e-02	O(1D)+HBr = HBr+O(3P)
3	0.000000e+00	BrO+HO2 = HBr+O3

	loss	loss.labs
6	3.102973e+03	OH+HBr = H2O+Br
5	1.179948e+02	O(3P)+HBr = OH+Br
2	1.316573e+00	HBr wet dep
4	1.449085e-01	O(1D)+HBr = OH+Br
3	3.622712e-02	O(1D)+HBr = HBr+O(3P)
1	0.000000e+00	HBr dry dep

2.132783e+04	OH+MeOOH= H2O+HCHO+OH
1.928317e+04	MeOOH+hv = HO2+HCHO+OH
1.755065e+04	HO2+MeOO = HCHO
1.157217e+04	O(1D)+CH4 = HCHO+H2
4.232539e+03	MeCOCH2OO+NO = MeCO3+HCHO+NO2
9.409703e+02	ISOOH+hv = OH+MACR+HCHO+HO2
8.572444e+02	MeOO+MeCO3= HO2+HCHO+MeOO
5.542748e+02	OH+PAN = HCHO+NO2+H2O
5.074803e+02	MeOO+MeOO = MeOH+HCHO
4.680949e+02	NO+MACRO2 = MGLY+HCHO+HO2
3.226463e+02	MeOO+NO3 = HO2+HCHO+NO2
2.605205e+02	MeCOCH2OOH+hv = MeCO3+HCHO+OH
2.538470e+02	OH+NALD = HCHO+CO+NO2
2.276743e+02	HACET+hv = MeCO3+HCHO+HO2
9.524938e+01	MeOO+MeCO3= MeCO2H+HCHO
9.252238e+01	NO+ISO2 = NO2+MACR+HCHO+HO2
7.915685e+01	MACROOH+hv = HACET+CO+MGLY+HCHO
5.811770e+01	MACR+hv = MeCO3+HCHO+CO+HO2
4.839305e+01	MeOO+MeOO = HO2+HO2+HCHO+HCHO
4.188680e+01	NALD+hv = HCHO+CO+NO2+HO2
2.067728e+01	OH+MeONO2 = HCHO+NO2+H2O
4.312027e+00	MeONO2+hv = HO2+HCHO+NO2

	loss	loss.labs
7	3.727494e+05	HCHO+hv = H2+CO
6	2.431287e+05	HCHO+hv = HO2+HO2+CO
9	2.142507e+05	OH+HCHO = H2O+HO2+CO
8	5.879558e+04	O(3P)+HCHO = OH+CO+HO2
4	3.045455e+04	Cl+HCHO = HCl+CO+HO2
3	1.406029e+03	Br+HCHO = HBr+CO+HO2
2	5.446101e+02	HCHO wet dep
5	2.299851e+00	NO3+HCHO = HONO2+HO2+CO
1	1.086330e-04	HCHO dry dep

	prod	prod.labs
1	151801.78108	Cl+CH4 = HCl+MeOO
9	116877.55990	OH+ClO = HCl+O2
5	34873.71762	Cl+HO2 = HCl+O2
4	30454.55413	Cl+HCHO = HCl+CO+HO2
2	5528.48376	Cl+H2 = HCl+H
6	2795.86709	Cl+MeOOH= HCl+MeOO
3	98.87910	Cl+H2O2 = HCl+HO2
10	64.53026	O(1D)+HCl = O(3P)+HCl
8	2.63417	MeBr+Cl = Br+HCl
7	0.00000	ClO+HO2 = HCl+O3

	loss	loss.labs
10	314560.42029	OH+HCl = H2O+Cl
4	17546.15137	HOCl+HCl = Cl+Cl+H2O
11	5969.79130	HCl+hv = H+Cl
3	3989.01372	ClONO2+HCl = Cl+Cl+HONO2
9	887.91368	O(3P)+HCl = OH+Cl
8	482.78195	O(1D)+HCl = OH+Cl
6	172.08070	O(1D)+HCl = H+ClO
7	64.53026	O(1D)+HCl = O(3P)+HCl
5	62.07407	N2O5+HCl = Cl+NO2+HONO2
2	29.33156	HCl wet dep
1	0.00000	HCl dry dep

	prod	prod.labs
2	3.424612	O3+MACR = MGLY+HCOOH+HO2+CO
3	3.424612	O3+MACR = MGLY+HCOOH+HO2+CO
1	1.686007	O3+C5H8 = MeOO+HCOOH+CO+H2O2

	loss	loss.labs
3	3.649969e+02	OH+HCOOH= HO2
2	2.703705e+01	HCOOH wet dep
1	2.688803e-06	HCOOH dry dep

	prod	prod.labs
1	197589963.25	$\text{H} + \text{O}_2 = \text{HO}_2 + \text{m}$
27	45080054.33	$\text{OH} + \text{O}_3 = \text{HO}_2 + \text{O}_2$
24	1704804.02	$\text{OH} + \text{ClO} = \text{HO}_2 + \text{Cl}$
5	724389.52	$\text{MeOO} + \text{NO} = \text{HO}_2 + \text{HCHO} + \text{NO}_2$
30	243128.75	$\text{HCHO} + h\nu = \text{HO}_2 + \text{HO}_2 + \text{CO}$
38	243128.75	$\text{HCHO} + h\nu = \text{HO}_2 + \text{HO}_2 + \text{CO}$
35	214250.65	$\text{OH} + \text{HCHO} = \text{H}_2\text{O} + \text{HO}_2 + \text{CO}$
9	185155.12	$\text{BrO} + \text{OH} = \text{Br} + \text{HO}_2$
31	158266.97	$\text{HO}_2\text{NO}_2 + h\nu = \text{HO}_2 + \text{NO}_2$
32	158266.97	$\text{HO}_2\text{NO}_2 + h\nu = \text{HO}_2 + \text{NO}_2$
41	58795.58	$\text{O}(3\text{P}) + \text{HCHO} = \text{OH} + \text{CO} + \text{HO}_2$
25	57232.29	$\text{OH} + \text{H}_2\text{O}_2 = \text{HO}_2 + \text{H}_2\text{O}$
33	45432.79	$\text{O}(1\text{D}) + \text{CH}_4 = \text{HCHO} + \text{HO}_2 + \text{HO}_2$
40	45432.79	$\text{O}(1\text{D}) + \text{CH}_4 = \text{HCHO} + \text{HO}_2 + \text{HO}_2$
20	30454.55	$\text{Cl} + \text{HCHO} = \text{HCl} + \text{CO} + \text{HO}_2$
21	26020.17	$\text{ClO} + \text{MeOO} = \text{Cl} + \text{HCHO} + \text{HO}_2$

	loss	loss.labs
33	213248330.30	$\text{O(3P)} + \text{HO}_2 = \text{OH} + \text{O}_2$
9	17956684.82	$\text{HO}_2 + \text{NO} = \text{OH} + \text{NO}_2$
11	8021615.42	$\text{HO}_2 + \text{O}_3 = \text{OH} + \text{O}_2 + \text{O}_2$
34	3544288.10	$\text{OH} + \text{HO}_2 = \text{H}_2\text{O} + \text{O}_2$
28	2351992.63	$\text{ClO} + \text{HO}_2 = \text{HOCl} + \text{O}_2$
6	721165.84	$\text{BrO} + \text{HO}_2 = \text{HOBr} + \text{O}_2$
31	402080.60	$\text{H} + \text{HO}_2 = \text{OH} + \text{OH}$
3	286363.20	$\text{HO}_2 + \text{NO}_2 = \text{HO}_2\text{NO}_2 + \text{m}$
7	154530.09	$\text{HO}_2 + \text{HO}_2 = \text{H}_2\text{O}_2$
32	154530.09	$\text{HO}_2 + \text{HO}_2 = \text{H}_2\text{O}_2$
8	45886.90	$\text{HO}_2 + \text{MeOO} = \text{MeOOH}$
29	38532.72	$\text{H} + \text{HO}_2 = \text{H}_2 + \text{O}_2$
26	34873.72	$\text{Cl} + \text{HO}_2 = \text{HCl} + \text{O}_2$
2	21464.14	$\text{HO}_2 + \text{HO}_2 = \text{H}_2\text{O}_2 + \text{O}_2$
4	21464.14	$\text{HO}_2 + \text{HO}_2 = \text{H}_2\text{O}_2 + \text{O}_2$
21	17550.65	$\text{HO}_2 + \text{MeOO} = \text{HCHO}$

	prod	prod.labs
1	286363.2	HO2+NO2 = HO2NO2+m

	loss	loss.labs
4	1.582670e+05	HO2NO2+hv = HO2+NO2
5	1.582670e+05	HO2NO2+hv = HO2+NO2
6	1.134747e+05	OH+HO2NO2 = H2O+NO2+O2
7	1.289280e+04	HO2NO2+hv = OH+NO3
3	1.836591e+03	HO2NO2+m = HO2+NO2
2	9.238153e+01	HO2NO2 wet dep
1	8.334020e-06	HO2NO2 dry dep

	prod	prod.labs
1	721165.8	BrO+HO2 = HOBr+O2

	loss	loss.labs
3	7.211553e+05	HOB _r +h ν = OH+Br
2	6.176877e-02	HOB _r wet dep
1	0.000000e+00	HOB _r dry dep

	prod	prod.labs
2	2351992.6337	$\text{ClO} + \text{HO}_2 = \text{HOCl} + \text{O}_2$
3	22645.8236	$\text{OH} + \text{ClONO}_2 = \text{HOCl} + \text{NO}_3$
1	14533.5439	$\text{ClONO}_2 + \text{H}_2\text{O} = \text{HOCl} + \text{HONO}_2$
4	881.0969	$\text{OH} + \text{OCIO} = \text{HOCl} + \text{O}_2$

	loss	loss.labs
7	2.266148e+06	HOCl+hv = OH+Cl
5	9.150956e+04	O(3P)+HOCl = OH+ClO
3	1.754615e+04	HOCl+HCl = Cl+Cl+H2O
6	8.855038e+03	OH+HOCl = ClO+H2O
4	9.335213e+02	Cl+HOCl = Cl+Cl+OH
2	6.948680e+00	HOCl wet dep
1	0.000000e+00	HOCl dry dep

	prod	prod.labs
1	246907.7	OH+NO = HONO+m

	loss	loss.labs
4	2.426516e+05	HONO+hv = OH+NO
3	4.297341e+03	OH+HONO = H2O+NO2
2	6.784049e-01	HONO wet dep
1	0.000000e+00	HONOdry dep

	prod	prod.labs
1	4.076399e+05	OH+NO2 = HONO2+m
2	4.232052e+04	N2O5+H2O = HONO2+HONO2
4	4.232052e+04	N2O5+H2O = HONO2+HONO2
3	1.453354e+04	ClONO2+H2O = HOCl+HONO2
5	3.989014e+03	ClONO2+HCl = Cl+Cl+HONO2
6	6.207407e+01	N2O5+HCl = Cl+NO2+HONO2
7	5.854873e+01	N2O5+H2O = HONO2+HONO2
12	5.854873e+01	N2O5+H2O = HONO2+HONO2
8	2.299851e+00	NO3+HCHO = HONO2+HO2+CO
10	5.641315e-01	NO3+Me2CO= HONO2+MeCOCH2OO
11	5.179753e-02	NO3+MeCHO= HONO2+MeCO3
9	1.584353e-02	NO3+EtCHO= HONO2+EtCO3
13	4.212071e-03	NO3+MGLY = MeCO3+CO+HONO2

	loss	loss.labs
3	4.393148e+05	HONO2+hv = OH+NO2
4	1.653542e+05	OH+HONO2= H2O+NO3
2	9.500117e+02	HONO2 wet dep
1	9.155916e-06	HONO2 dry dep

	prod	prod.labs
1	702.209	OH+C5H8 = ISO2+

	loss	loss.labs
5	92.52237836	NO+ISO2 = NO2+MACR+HCHO+HO2
2	82.18003967	HO2+ISO2 = ISOOH
4	4.26440591	NO+ISO2 = ISON+
1	0.01934363	ISO2+ISO2 = MACR+MACR+HCHO+HO2
3	0.01934363	ISO2+ISO2 = MACR+MACR+HCHO+HO2

	prod	prod.labs
1	4.264406	NO+ISO2 = ISON+
2	1.242635	NO3+C5H8 = ISON+

	loss	loss.labs
3	1.753589e+02	OH+ISON = HACET+NALD
2	4.359650e+00	ISON wet dep
4	7.843942e-02	ISON+hv = NO2+MACR+HCHO+HO2
1	2.415673e-08	ISON dry dep

	prod	prod.labs
1	82.18004	HO2+ISO2 = ISOOH

	loss	loss.labs
4	9.409703e+02	ISOOH+hv = OH+MACR+HCHO+HO2
3	1.529470e+02	OH+ISOOH= MACR+OH
2	6.879715e-01	ISOOH wet dep
1	1.063486e-08	ISOOHdry dep

prod	prod.labs
940.97034798	ISOOH+hv = OH+MACR+HCHO+HO2
152.94701046	OH+ISOOH= MACR+OH
92.52237836	NO+ISO2 = NO2+MACR+HCHO+HO2
1.68600652	O3+C5H8 = MACR+HCHO+MACRO2+MeCO3
0.07843942	ISON+hv = NO2+MACR+HCHO+HO2
0.01934363	ISO2+ISO2 = MACR+MACR+HCHO+HO2
0.01934363	ISO2+ISO2 = MACR+MACR+HCHO+HO2

	loss	loss.labs
6	553.977227	OH+MACR = MACRO2
7	553.977227	OH+MACR = MACRO2
8	58.117700	MACR+hv = MeCO3+HCHO+CO+HO2
2	3.424612	O3+MACR = MGLY+HCOOH+HO2+CO
3	3.424612	O3+MACR = MGLY+HCOOH+HO2+CO
4	3.424612	O3+MACR = OH+MeCO3
5	3.424612	O3+MACR = OH+MeCO3
1	0.000000	MACR dry dep

prod	prod.labs
1.501198e+03	OH+MACROOH= MACRO2
5.539772e+02	OH+MACR = MACRO2
5.539772e+02	OH+MACR = MACRO2
6.687260e+00	MPAN+hv = MACRO2+NO2
1.686007e+00	O3+C5H8 = MACR+HCHO+MACRO2+MeCO3
1.580314e-02	MPAN+m = MACRO2+NO2

loss	loss.labs
1327.6369616	HO2+MACRO2 = MACROOH
468.0949437	NO+MACRO2 = MGLY+HCHO+HO2
468.0949437	NO+MACRO2 = NO2+MeCO3+HACET+CO
288.6671284	MACRO2+NO2 = MPAN+m
0.3765767	MACRO2+MACRO2 = HACET+MGLY+HCHO+CO
0.3765767	MACRO2+MACRO2 = HO2
0.3765767	MACRO2+MACRO2 = HACET+MGLY+HCHO+CO
0.3765767	MACRO2+MACRO2 = HO2

	prod	prod.labs
1	1327.637	HO2+MACRO2 = MACROOH

	loss	loss.labs
3	1.501198e+03	OH+MACROOH= MACRO2
4	7.915685e+01	MACROOH+hv = OH+HO2+OH+HO2
5	7.915685e+01	MACROOH+hv = HACET+CO+MGly+HCHO
2	9.312699e+00	MACROOH wet dep
1	7.044404e-07	MACROOH dry dep

	loss	loss.labs
4	7552.8751975	Me2CO+hv = MeCO3+MeOO
2	4154.7006974	OH+Me2CO= H2O+MeCOCH2OO
3	4154.7006974	OH+Me2CO= H2O+MeCOCH2OO
1	0.5641315	NO3+Me2CO= HONO2+MeCOCH2OO

	loss	loss.labs
4	23.3190016	MeBr+hv = Br+H
3	19.7319994	MeBr+OH = Br+H2O
1	2.6341698	MeBr+Cl = Br+HCl
2	0.1719143	MeBr+O(1D)= Br+OH

	prod	prod.labs
2	4881.354041	EtOO+NO = MeCHO+HO2+NO2
6	615.008587	OH+EtOOH= H2O+MeCHO+OH
5	376.376967	EtOOH+hv = MeCHO+HO2+OH
1	61.104853	EtOO+MeCO3= MeCHO+HO2+MeOO
4	24.272608	OH+PPAN = MeCHO+NO2+H2O
3	1.886407	EtOO+NO3 = MeCHO+HO2+NO2

	loss	loss.labs
4	5.203396e+03	OH+MeCHO= H2O+MeCO3
3	1.304542e+03	MeCHO+hv = MeOO+HO2+CO
2	5.179753e-02	NO3+MeCHO= HONO2+MeCO3
5	3.258078e-03	MeCHO+hv = CH4+CO
1	0.000000e+00	MeCHO dry dep

	prod	prod.labs
1	1444.61857	HO2+MeCO3= MeCO2H+O3
2	95.24938	MeOO+MeCO3= MeCO2H+HCHO

	loss	loss.labs
3	2.894409e+03	OH+MeCO2H = MeOO
2	1.927010e+02	MeCO2H wet dep
1	4.329010e-05	MeCO2H dry dep

prod	prod.labs
7.552875e+03	Me2CO+hv = MeCO3+MeOO
6.771278e+03	PAN+hv = MeCO3+NO2
6.589094e+03	MGLY+hv = MeCO3+CO+HO2
5.907398e+03	OH+MeCO3H = MeCO3
5.203396e+03	OH+MeCHO= H2O+MeCO3
4.232539e+03	MeCOCH2OO+NO = MeCO3+HCHO+NO2
3.755032e+03	OH+MGLY = MeCO3+CO
4.680949e+02	NO+MACRO2 = NO2+MeCO3+HACET+CO
2.605205e+02	MeCOCH2OOH+hv = MeCO3+HCHO+OH
2.276743e+02	HACET+hv = MeCO3+HCHO+HO2
5.811770e+01	MACR+hv = MeCO3+HCHO+CO+HO2
6.042819e+00	PAN+m = MeCO3+NO2
3.424612e+00	O3+MACR = OH+MeCO3
3.424612e+00	O3+MACR = OH+MeCO3
1.686007e+00	O3+C5H8 = MACR+HCHO+MACRO2+MeCO3
1.672383e+00	MeCOCH2OO+NO3 = MeCO3+HCHO+NO2
5.179753e-02	NO3+MeCHO= HONO2+MeCO3
4.212071e-03	NO3+MGLY = MeCO3+CO+HONO2

	loss	loss.labs
2	2.597138e+04	MeCO3+NO = MeOO+CO2+NO2
7	4.241252e+03	HO2+MeCO3= OH+MeOO
6	3.944920e+03	HO2+MeCO3= MeCO3H
1	3.522905e+03	MeCO3+NO2 = PAN+m
5	1.444619e+03	HO2+MeCO3= MeCO2H+O3
8	8.572444e+02	MeOO+MeCO3= HO2+HCHO+MeOO
9	9.524938e+01	MeOO+MeCO3= MeCO2H+HCHO
4	6.110485e+01	EtOO+MeCO3= MeCHO+HO2+MeOO
3	4.156246e-01	MeCO3+NO3 = MeOO+CO2+NO2

	prod	prod.labs
2	4154.7006974	OH+Me2CO= H2O+MeCOCH2OO
3	4154.7006974	OH+Me2CO= H2O+MeCOCH2OO
4	226.2802843	OH+MeCOCH2OOH= H2O+MeCOCH2OO
1	0.5641315	NO3+Me2CO= HONO2+MeCOCH2OO

	loss	loss.labs
1	4232.539443	MeCOCH2OO+NO = MeCO3+HCHO+NO2
3	785.664402	HO2+MeCOCH2OO= MeCOCH2OOH
2	1.672383	MeCOCH2OO+NO3 = MeCO3+HCHO+NO2

	prod	prod.labs
1	785.6644	HO2+MeCOCH2OO= MeCOCH2OOH

	loss	loss.labs
4	4.224975e+02	OH+MeCOCH2OOH= OH+MGLY
5	2.605205e+02	MeCOCH2OOH+hv = MeCO3+HCHO+OH
3	2.262803e+02	OH+MeCOCH2OOH= H2O+MeCOCH2OO
2	8.924089e+00	MeCOCH2OOH wet dep
1	7.338933e-06	MeCOCH2OOH dry dep

	prod	prod.labs
1	507.4803	MeOO+MeOO = MeOH+HCHO

	loss	loss.labs
3	22723.253	OH+MeOH = HO2+HCHO
2	1541.889	MeOH wet dep
1	0.000	MeOH dry dep

	prod	prod.labs
1	724.3895	MeOO+NO = MeONO2+

	loss	loss.labs
1	20.677284	OH+MeONO2 = HCHO+NO2+H2O
2	4.312027	MeONO2+hv = HO2+HCHO+NO2

	prod	prod.labs
12	4.348913e+05	OH+CH4 = H2O+MeOO
6	1.684394e+05	O(1D)+CH4 = OH+MeOO
3	1.518018e+05	Cl+CH4 = HCl+MeOO
1	2.597138e+04	MeCO3+NO = MeOO+CO2+NO2
13	1.901396e+04	OH+MeOOH= H2O+MeOO
16	7.552875e+03	Me2CO+hv = MeCO3+MeOO
15	4.318762e+03	CH4+hv = MeOO+H
5	4.241252e+03	HO2+MeCO3= OH+MeOO
10	2.894409e+03	OH+MeCO2H = MeOO
4	2.795867e+03	Cl+MeOOH= HCl+MeOO
11	1.304542e+03	MeCHO+hv = MeOO+HO2+CO
14	9.976222e+02	MeCO3H+hv = MeOO+OH
8	8.572444e+02	MeOO+MeCO3= HO2+HCHO+MeOO
7	6.110485e+01	EtOO+MeCO3= MeCHO+HO2+MeOO
9	1.686007e+00	O3+C5H8 = MeOO+HCOOH+CO+H2O2
2	4.156246e-01	MeCO3+NO3 = MeOO+CO2+NO2

	loss	loss.labs
2	7.243895e+05	MeOO+NO = HO2+HCHO+NO2
10	4.588690e+04	HO2+MeOO = MeOOH
9	2.602017e+04	ClO+MeOO = Cl+HCHO+HO2
11	1.755065e+04	HO2+MeOO = HCHO
4	8.572444e+02	MeOO+MeCO3= HO2+HCHO+MeOO
7	7.243895e+02	MeOO+NO = MeONO2+
6	5.074803e+02	MeOO+MeOO = MeOH+HCHO
13	5.074803e+02	MeOO+MeOO = MeOH+HCHO
8	3.226463e+02	MeOO+NO3 = HO2+HCHO+NO2
5	9.524938e+01	MeOO+MeCO3= MeCO2H+HCHO
3	4.839305e+01	MeOO+MeOO = HO2+HO2+HCHO+HCHO
12	4.839305e+01	MeOO+MeOO = HO2+HO2+HCHO+HCHO
1	6.998764e+00	MeOO wet dep

	prod	prod.labs
1	45886.9	HO2+MeOO = MeOOH

	loss	loss.labs
5	2.132783e+04	OH+MeOOH= H2O+HCHO+OH
6	1.928317e+04	MeOOH+hv = HO2+HCHO+OH
4	1.901396e+04	OH+MeOOH= H2O+MeOO
3	2.795867e+03	Cl+MeOOH= HCl+MeOO
2	4.899399e+02	MeOOH wet dep
1	1.201953e-03	MeOOH dry dep

prod	prod.labs
8675.1504039	OH+HACET= MGLY+HO2
468.0949437	NO+MACRO2 = MGLY+HCHO+HO2
422.4975318	OH+MeCOCH2OOH= OH+MGLY
79.1568534	MACROOH+hv = HACET+CO+MGLY+HCHO
3.4246119	O3+MACR = MGLY+HCOOH+HO2+CO
3.4246119	O3+MACR = MGLY+HCOOH+HO2+CO
0.3765767	MACRO2+MACRO2 = HACET+MGLY+HCHO+CO

	loss	loss.labs
5	6.589094e+03	MGLY+hv = MeCO3+CO+HO2
4	3.755032e+03	OH+MGLY = MeCO3+CO
2	4.315106e+00	MGLY wet dep
3	4.212071e-03	NO3+MGLY = MeCO3+CO+HONO2
1	0.000000e+00	MGLY dry dep

	prod	prod.labs
1	288.6671	MACRO2+NO2 = MPAN+m

	loss	loss.labs
3	7.378849e+02	OH+MPAN = HACET+NO2
4	6.687260e+00	MPAN+hv = MACRO2+NO2
2	1.580314e-02	MPAN+m = MACRO2+NO2
1	5.132876e-08	MPAN dry dep

	prod	prod.labs
1	21779.87	NO+hv = N+O(3P)

	loss	loss.labs
3	19397.6239	N+O2 = NO+O(3P)
1	2026.0016	N+NO = N2+O(3P)
2	237.8167	N+NO2 = N2O+O(3P)

	prod	prod.labs
1	1567.7185	$\text{O}(1\text{D}) + \text{N}_2 = \text{N}_2\text{O} + \text{m}$
2	237.8167	$\text{N} + \text{NO}_2 = \text{N}_2\text{O} + \text{O}(3\text{P})$

	loss	loss.labs
3	157817.127	$\text{N}_2\text{O} + h\nu = \text{N}_2 + \text{O}(1\text{D})$
2	11285.849	$\text{O}(1\text{D}) + \text{N}_2\text{O} = \text{NO} + \text{NO}$
1	7111.631	$\text{O}(1\text{D}) + \text{N}_2\text{O} = \text{N}_2 + \text{O}_2$

	prod	prod.labs
1	628995.5	NO2+NO3 = N2O5+m

	loss	loss.labs
7	5.564836e+05	N2O5+hv = NO2+NO3
4	4.232052e+04	N2O5+H2O = HONO2+HONO2
3	2.970847e+04	N2O5+m = NO2+NO3
5	6.207407e+01	N2O5+HCl = Cl+NO2+HONO2
6	5.854873e+01	N2O5+H2O = HONO2+HONO2
2	9.592874e+00	N2O5 wet dep
1	1.716286e-06	N2O5 dry dep

	prod	prod.labs
1	175.3589	OH+ISON = HACET+NALD

	loss	loss.labs
2	253.8470	OH+NALD = HCHO+CO+NO2
3	41.8868	NALD+hv = HCHO+CO+NO2+HO2
1	0.0000	NALD dry dep

	prod	prod.labs
7	8.920139e+08	NO ₂ +hν = NO+O(3P)
5	1.199202e+08	O(3P)+NO ₂ = NO+O ₂
8	4.561741e+05	NO ₃ +hν = NO+O ₂
9	2.426516e+05	HONO+hν = OH+NO
1	1.939762e+04	N+O ₂ = NO+O(3P)
4	1.128585e+04	O(1D)+N ₂ O = NO+NO
6	1.128585e+04	O(1D)+N ₂ O = NO+NO
3	8.455189e+03	H+NO ₂ = OH+NO
2	4.234442e+02	NO ₂ +NO ₃ = NO+NO ₂ +O ₂

13	1.648848e+08	$\text{ClO}+\text{NO} = \text{Cl}+\text{NO}_2$
16	1.795668e+07	$\text{HO}_2+\text{NO} = \text{OH}+\text{NO}_2$
6	1.540409e+07	$\text{BrO}+\text{NO} = \text{Br}+\text{NO}_2$
20	7.243895e+05	$\text{MeOO}+\text{NO} = \text{HO}_2+\text{HCHO}+\text{NO}_2$
3	4.342959e+05	$\text{O}(3\text{P})+\text{NO} = \text{NO}_2+\text{m}$
7	3.294081e+05	$\text{NO}+\text{NO}_3 = \text{NO}_2+\text{NO}_2$
4	2.469077e+05	$\text{OH}+\text{NO} = \text{HONO}+\text{m}$
18	2.597138e+04	$\text{MeCO}_3+\text{NO} = \text{MeOO}+\text{CO}_2+\text{NO}_2$
25	2.177987e+04	$\text{NO}+\text{h}\nu = \text{N}+\text{O}(3\text{P})$
15	4.881354e+03	$\text{EtOO}+\text{NO} = \text{MeCHO}+\text{HO}_2+\text{NO}_2$
19	4.232539e+03	$\text{MeCOCH}_2\text{OO}+\text{NO} = \text{MeCO}_3+\text{HCHO}+\text{NO}_2$
22	2.026002e+03	$\text{N}+\text{NO} = \text{N}_2+\text{O}(3\text{P})$
24	9.683281e+02	$\text{OCIO}+\text{NO} = \text{NO}_2+\text{ClO}$
21	7.243895e+02	$\text{MeOO}+\text{NO} = \text{MeONO}_2+$
17	5.947275e+02	$\text{i-PrOO}+\text{NO} = \text{Me}_2\text{CO}+\text{HO}_2+\text{NO}_2$
11	4.680949e+02	$\text{NO}+\text{MACRO}_2 = \text{MGLY}+\text{HCHO}+\text{HO}_2$
12	4.680949e+02	$\text{NO}+\text{MACRO}_2 = \text{NO}_2+\text{MeCO}_3+\text{HACET}+\text{CO}$
23	1.053203e+02	$\text{n-PrOO}+\text{NO} = \text{EtCHO}+\text{HO}_2+\text{NO}_2$
10	9.252238e+01	$\text{NO}+\text{ISO}_2 = \text{NO}_2+\text{MACR}+\text{HCHO}+\text{HO}_2$
14	7.389673e+01	$\text{EtCO}_3+\text{NO} = \text{EtOO}+\text{CO}_2+\text{NO}_2$
9	4.264406e+00	$\text{NO}+\text{ISO}_2 = \text{ISON}+$
2	1.581066e+00	$\text{NO}+\text{NO} = \text{NO}_2+\text{NO}_2$

23	1.130688e+04	ClO+NO3 = Cl+O2+NO2
54	6.771278e+03	PAN+hv = MeCO3+NO2
26	4.881354e+03	EtOO+NO = MeCHO+HO2+NO2
42	4.297341e+03	OH+HONO = H2O+NO2
32	4.232539e+03	MeCOCH2OO+NO = MeCO3+HCHO+NO2
19	3.140049e+03	HO2+NO3 = OH+NO2+O2
41	2.052388e+03	OH+NO3 = HO2+NO2
4	1.836591e+03	HO2NO2+m = HO2+NO2
38	9.683281e+02	OCIO+NO = NO2+ClO
43	7.378849e+02	OH+MPAN = HACET+NO2
28	5.947275e+02	i-PrOO+NO = Me2CO+HO2+NO2
45	5.542748e+02	OH+PAN = HCHO+NO2+H2O
14	4.680949e+02	NO+MACRO2 = NO2+MeCO3+HACET+CO
21	4.234442e+02	NO2+NO3 = NO+NO2+O2
35	3.226463e+02	MeOO+NO3 = HO2+HCHO+NO2
50	2.538470e+02	OH+NALD = HCHO+CO+NO2
22	1.329375e+02	NO3+Br = BrO+NO2
36	1.053203e+02	n-PrOO+NO = EtCHO+HO2+NO2
13	9.252238e+01	NO+ISO2 = NO2+MACR+HCHO+HO2
24	7.389673e+01	EtCO3+NO = EtOO+CO2+NO2
9	6.207407e+01	N2O5+HCl = Cl+NO2+HONO2

	loss	loss.labs
16	8.920139e+08	NO ₂ +hv = NO+O(3P)
15	1.199202e+08	O(3P)+NO ₂ = NO+O ₂
5	2.069239e+06	ClO+NO ₂ = ClONO ₂ +m
12	1.270996e+06	NO ₂ +O ₃ = NO ₃ +
2	6.289955e+05	NO ₂ +NO ₃ = N ₂ O ₅ +m
3	6.258977e+05	O(3P)+NO ₂ = NO ₃ +m
4	5.281303e+05	BrO+NO ₂ = BrONO ₂ +m
7	4.076399e+05	OH+NO ₂ = HONO ₂ +m
6	2.863632e+05	HO ₂ +NO ₂ = HO ₂ NO ₂ +m
13	8.455189e+03	H+NO ₂ = OH+NO
8	3.522905e+03	MeCO ₃ +NO ₂ = PAN+m
11	4.234442e+02	NO ₂ +NO ₃ = NO+NO ₂ +O ₂
10	2.886671e+02	MACRO ₂ +NO ₂ = MPAN+m
14	2.378167e+02	N+NO ₂ = N ₂ O+O(3P)
9	1.031645e+01	EtCO ₃ +NO ₂ = PPAN+m
1	1.337262e-06	NO ₂ dry dep

	prod	prod.labs
10	1588710.17	ClONO ₂ +hv = Cl+NO ₃
3	1270996.33	NO ₂ +O ₃ = NO ₃ +
1	625897.73	O(3P)+NO ₂ = NO ₃ +m
8	556483.57	N ₂ O ₅ +hv = NO ₂ +NO ₃
9	448895.50	BrONO ₂ +hv = Br+NO ₃
7	165354.19	OH+HONO ₂ = H ₂ O+NO ₃
5	76806.37	O(3P)+ClONO ₂ = ClO+NO ₃
2	29708.47	N ₂ O ₅ +m = NO ₂ +NO ₃
6	22645.82	OH+ClONO ₂ = HOCl+NO ₃
4	18629.05	Cl+ClONO ₂ = Cl+Cl+NO ₃
11	12892.80	HO ₂ NO ₂ +hv = OH+NO ₃

26	4.561741e+05	NO3+hv = NO+O2
22	3.294081e+05	NO+NO3 = NO2+NO2
24	2.507945e+04	O(3P)+NO3 = O2+NO2
12	1.130688e+04	ClO+NO3 = Cl+O2+NO2
16	3.140049e+03	HO2+NO3 = OH+NO2+O2
25	2.052388e+03	OH+NO3 = HO2+NO2
23	4.234442e+02	NO2+NO3 = NO+NO2+O2
20	3.226463e+02	MeOO+NO3 = HO2+HCHO+NO2
4	1.329375e+02	NO3+Br = BrO+NO2
11	3.326133e+01	Cl+NO3 = ClO+NO2
5	2.299851e+00	NO3+HCHO = HONO2+HO2+CO
15	1.886407e+00	EtOO+NO3 = MeCHO+HO2+NO2
19	1.672383e+00	MeCOCH2OO+NO3 = MeCO3+HCHO+NO2
6	1.242635e+00	NO3+C5H8 = ISON+
17	6.378369e-01	i-PrOO+NO3 = Me2CO+HO2+NO2
9	5.641315e-01	NO3+Me2CO= HONO2+MeCOCH2OO
18	4.156246e-01	MeCO3+NO3 = MeOO+CO2+NO2
21	1.217169e-01	n-PrOO+NO3 = EtCHO+HO2+NO2
10	5.179753e-02	NO3+MeCHO= HONO2+MeCO3
7	1.584353e-02	NO3+EtCHO= HONO2+EtCO3
8	4.212071e-03	NO3+MGLY = MeCO3+CO+HONO2
14	1.904471e-03	EtCO3+NO3 = EtOO+CO2+NO2

	prod	prod.labs
1	2.701368e+11	O(3P)+O2 = O3+m
5	1.444619e+03	HO2+MeCO3= MeCO2H+O3
2	3.791774e+00	HO2+EtCO3= O3+EtCO2H
3	0.000000e+00	BrO+HO2 = HBr+O3
4	0.000000e+00	ClO+HO2 = HCl+O3

loss	loss.labs
2.013247e+11	O3+hv = O2+O(3P)
6.843809e+10	O3+hv = O2+O(1D)
8.133426e+08	NO+O3 = NO2+
2.820030e+08	Cl+O3 = ClO+O2
9.294910e+07	Br+O3 = BrO+O2
9.023568e+07	O(3P)+O3 = O2+O2
4.508005e+07	OH+O3 = HO2+O2
3.623277e+07	H+O3 = OH+O2
8.021615e+06	HO2+O3 = OH+O2+O2
1.353531e+06	O(1D)+O3 = O2+O(3P)+O(3P)
1.353531e+06	O(1D)+O3 = O2+O2
1.270996e+06	NO2+O3 = NO3+
3.424612e+00	O3+MACR = MGLY+HCOOH+HO2+CO
3.424612e+00	O3+MACR = MGLY+HCOOH+HO2+CO
3.424612e+00	O3+MACR = OH+MeCO3
3.424612e+00	O3+MACR = OH+MeCO3
1.686007e+00	O3+C5H8 = HO2+OH
1.686007e+00	O3+C5H8 = MACR+HCHO+MACRO2+MeCO3
1.686007e+00	O3+C5H8 = MeOO+HCOOH+CO+H2O2
4.935352e-02	O3 dry dep

	prod	prod.labs
1	2042246.61	BrO+ClO = Br+OCIO
3	2215.32	ClO+ClO = Cl+OCIO
2	0.00	ClO+NO3 = OCIO+NO2

	loss	loss.labs
6	2.042383e+06	OCIO+hv = O(3P)+ClO
3	9.683281e+02	OCIO+NO = NO2+ClO
5	8.810969e+02	OH+OCIO = HOCl+O2
2	7.225248e+01	Cl+OCIO = ClO+ClO
4	1.733241e+01	O(3P)+OCIO = O2+ClO
1	1.262128e+00	Br+OCIO = BrO+ClO

	prod	prod.labs
23	213248330.3	O(3P)+HO2 = OH+O2
3	36232772.0	H+O3 = OH+O2
4	17956684.8	HO2+NO = OH+NO2
6	8021615.4	HO2+O3 = OH+O2+O2
10	3086861.8	O(1D)+H2O = OH+OH
14	3086861.8	O(1D)+H2O = OH+OH
43	2266148.3	HOCl+hv = OH+Cl
41	721155.3	HOBr+hv = OH+Br
42	505263.0	H2O+hv = OH+H
29	439314.8	HONO2+hv = OH+NO2
1	402080.6	H+HO2 = OH+OH
12	402080.6	H+HO2 = OH+OH
38	242651.6	HONO+hv = OH+NO
8	168439.4	O(1D)+CH4 = OH+MeOO
28	140859.8	H2O2+hv = OH+OH
33	140859.8	H2O2+hv = OH+OH

	loss	loss.labs
60	232682648.2	$\text{O}(3\text{P}) + \text{OH} = \text{O}_2 + \text{H}$
23	45080054.3	$\text{OH} + \text{O}_3 = \text{HO}_2 + \text{O}_2$
16	3544288.1	$\text{OH} + \text{HO}_2 = \text{H}_2\text{O} + \text{O}_2$
8	1921060.7	$\text{OH} + \text{CO} = \text{H} + \text{CO}_2$
10	1704804.0	$\text{OH} + \text{ClO} = \text{HO}_2 + \text{Cl}$
7	434891.3	$\text{OH} + \text{CH}_4 = \text{H}_2\text{O} + \text{MeOO}$
2	407639.9	$\text{OH} + \text{NO}_2 = \text{HONO}_2 + \text{m}$
15	314560.4	$\text{OH} + \text{HCl} = \text{H}_2\text{O} + \text{Cl}$
1	246907.7	$\text{OH} + \text{NO} = \text{HONO} + \text{m}$
14	214250.7	$\text{OH} + \text{HCHO} = \text{H}_2\text{O} + \text{HO}_2 + \text{CO}$
5	185155.1	$\text{BrO} + \text{OH} = \text{Br} + \text{HO}_2$
20	165354.2	$\text{OH} + \text{HONO}_2 = \text{H}_2\text{O} + \text{NO}_3$
12	160891.1	$\text{OH} + \text{H}_2 = \text{H}_2\text{O} + \text{H}$
26	160891.1	$\text{OH} + \text{H}_2 = \text{H}_2\text{O} + \text{H}$
9	116877.6	$\text{OH} + \text{ClO} = \text{HCl} + \text{O}_2$
18	113474.7	$\text{OH} + \text{HO}_2\text{NO}_2 = \text{H}_2\text{O} + \text{NO}_2 + \text{O}_2$

	prod	prod.labs
1	3522.905	MeCO3+NO2 = PAN+m

	loss	loss.labs
4	6.771278e+03	PAN+hv = MeCO3+NO2
3	5.542748e+02	OH+PAN = HCHO+NO2+H2O
2	6.042819e+00	PAN+m = MeCO3+NO2
1	7.897219e-06	PAN dry dep

	prod	prod.labs
1	10.31645	EtCO3+NO2 = PPAN+m

	loss	loss.labs
3	2.427261e+01	OH+PPAN = MeCHO+NO2+H2O
4	6.550837e+00	PPAN+hv = EtCO3+NO2
2	1.644888e-02	PPAN+m = EtCO3+NO2
1	5.085260e-09	PPAN dry dep

