

Supplementary Material for PCCP
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ELEMENTS  H  O  C  N  HE  AR  END
SPECIES
B1O          B2CO          B3C          B4CH          B5CH2
B6CH2        H2            H2O          O2            H2O2
CH4          HCHO          CH3OH        CO2           CH3OOH
C2H2T        C2H4Z        C2H6         CH2CO        CH3CHO
C2H5OH       C2H5OOH     CH3COOOH    C3H6Y        C3H8
C4H8Y        C4H10        C2H5CHO     C3H7OH       C2H6CO
C3H8CO       C4H6Z2      C2H3CHOZ    C2H5COOOH   C3H7COOOH
C3H7OOH     C3H5OOHZ    C3H7CHO     C4H9OH       C4H10O
C4H10OO     C5H12        C6H14       C4H9OOH     C3H5OHY
C3H5OOHY    C3H5CHOY    C4H7OHY     C4H8OOY     C5H10Y
C6H10Y2     C7H12Y2     C4H7OOHY    C4H7CHOY    C5H9OHY
C5H10OOY    C6H12Y      C8H14Y2     C2H4O#3     C3H6O#3
C3H6O#4     C4H8O#3     C4H8O#4     C6H10Z#6    C2H3O#4COOOH
C3H5O#4COOOH R1H          R2OH        R3OOH        R4CH3
R5CHO        R6CH2OH     R7CH3O      R8CH3OO     R9C2HT
R10C2H3V    R11C2H5     R12CHCOV    R13CH2CHO   R14CH3CO
R15C2H5O    R16C2H4OOH R17C2H5OO   R18CH3COOO R19C3H7
R20C4H9     R21C3H7     R22C3H7OO  R23C4H9OO  R24C3H7OO
R25C3H6OOH R26C3H6OOH R27C4H8OOH R28C4H8OOH R29C4H8OOH
R30C3H6OOH R31C3H6OOOOH R32C3H6OOOOH R33C4H8OOOOH R34C4H8OOOOH
R35C4H8OOOOH R36C4H8OOH R37C3H6OOOOH R38C4H8OOOOH ZC3H5Y
ZC4H7Y      ZCOC2H5     ZCOC2H3Z    ZCOC3H7     ZCOOOC2H5
ZCOOOC3H7  ZC3H5O#4   ZC4H7O#4    ZOOC3H5O#4  ZOOC4H7O#4
ZC3H4O#4OOH ZC4H6O#4OOH ZOOC3H4O#4OOH ZOOC4H6O#4OOH N2
HE          AR
END
  
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! Heat-of-formation, entropy, and heat capacity of species at 298.15K
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!
! species          dH          S          Cp          Tlow          Tmid          Thigh
!                  kJ/mole      J/K_mole   kJ/mole      K              K              K
!
! B1O              249.185     160.937    21.898       300.           1000.          5000.
! B2CO             -110.535    197.538    29.070       300.           1000.          5000.
! B3C              716.712     157.999    20.834       300.           1000.          5000.
! B4CH             594.151     182.922    29.085       300.           1000.          5000.
! B5CH2            386.973     195.474    34.484       300.           1000.          5000.
! B6CH2            424.706     188.705    33.773       300.           1000.          5000.
! H2               -0.053      130.568    28.910       300.           1000.          5000.
! H2O              -241.904    188.689    33.514       300.           1000.          5000.
! O2               -0.054      205.023    29.260       300.           1000.          5000.
! H2O2             -136.206    232.870    43.221       300.           1000.          5000.
! CH4              -74.971     186.263    35.408       300.           1000.          5000.
! HCHO             -115.987    218.645    35.147       300.           1000.          5000.
! CH3OH            -201.307    239.689    43.543       300.           1000.          5000.
! CO2              -393.556    213.792    37.412       300.           1000.          5000.
! CH3OOH           -131.130    282.406    64.891       300.           1000.          5000.
! C2H2T            226.634    200.822    44.182       300.           1000.          5000.
! C2H4Z            52.159     219.440    44.156       300.           1000.          5000.
! C2H6             -84.873     229.481    52.437       300.           1000.          5000.
! CH2CO            -47.808     241.781    51.933       300.           1000.          5000.
! CH3CHO           -177.298    264.252    58.431       300.           1399.          5000.
! C2H5OH           -235.014    282.573    65.285       300.           1000.          5000.
! C2H5OOH         -163.205    320.706    83.609       300.           1000.          5000.
! CH3COOOH        -336.806    336.520    73.606       300.           1000.          5000.
! C3H6Y            20.209     266.926    63.710       300.           1000.          5000.
! C3H8            -104.104    269.896    73.386       300.           1000.          5000.
  
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! C4H8Y	-0.284	305.053	85.576	300.	1000.	5000.
! C4H10	-126.473	310.103	97.203	300.	1000.	5000.
! C2H5CHO	-185.912	304.400	81.040	300.	1000.	5000.
! C3H7OH	-257.801	324.788	86.868	300.	1000.	5000.
! C2H6CO	-217.793	294.915	74.586	300.	1000.	5000.
! C3H8CO	-238.656	338.092	102.504	300.	1000.	5000.
! C4H6Z2	109.935	278.724	79.872	300.	1000.	5000.
! C2H3CHOZ	-74.821	296.966	76.789	300.	1000.	5000.
! C2H5COOOH	-264.862	351.967	114.925	300.	1382.	5000.
! C3H7COOOH	-285.483	391.378	137.855	300.	1384.	5000.
! C3H7OOH	-204.192	351.779	108.571	300.	1000.	5000.
! C3H5OOHZ	-54.735	347.704	95.113	300.	1000.	5000.
! C3H7CHO	-213.511	332.127	92.773	300.	1000.	5000.
! C4H9OH	-285.023	348.318	109.035	300.	1000.	5000.
! C4H10O	-251.971	344.582	111.521	300.	1000.	5000.
! C4H10OO	-199.701	392.684	128.385	300.	1000.	5000.
! C5H12	-154.866	343.573	118.673	300.	1000.	5000.
! C6H14	-178.365	365.625	140.647	300.	1000.	5000.
! C4H9OOH	-207.274	399.528	129.352	300.	1000.	5000.
! C3H5OHY	-124.736	311.515	77.853	300.	1395.	5000.
! C3H5OOHY	-60.293	345.736	98.046	300.	1386.	5000.
! C3H5CHOY	-75.524	337.586	87.487	300.	1390.	5000.
! C4H7OHY	-150.257	352.517	98.688	300.	1398.	5000.
! C4H8OOY	-60.293	386.648	117.951	300.	1370.	5000.
! C5H10Y	-21.272	345.768	109.582	300.	1000.	5000.
! C6H10Y2	84.434	373.998	119.620	300.	1394.	5000.
! C7H12Y2	55.483	407.949	141.783	300.	1396.	5000.
! C4H7OOHY	-99.795	376.398	121.251	300.	1394.	5000.
! C4H7CHOY	-109.415	364.057	111.148	300.	1392.	5000.
! C5H9OHY	-179.208	380.708	120.748	300.	1399.	5000.
! C5H10OOY	-99.795	426.440	141.325	300.	1382.	5000.
! C6H12Y	-50.042	375.588	130.663	300.	1395.	5000.
! C8H14Y2	26.531	430.370	163.839	300.	1397.	5000.
! C2H4O#3	-62.803	242.431	48.400	300.	1387.	5000.
! C3H6O#3	-92.990	286.716	72.083	300.	1000.	5000.
! C3H6O#4	-80.355	267.857	60.113	300.	1000.	5000.
! C4H8O#3	-112.138	322.170	95.278	300.	1000.	5000.
! C4H8O#4	-118.832	310.456	83.569	300.	1000.	5000.
! C6H10Z#6	-4.600	310.614	101.458	200.	1000.	6000.
! C2H3O#4COOOH	-406.539	336.286	116.115	300.	1368.	5000.
! C3H5O#4COOOH	-441.391	364.477	136.052	300.	1387.	5000.
! R1H	217.949	114.636	20.920	300.	1000.	5000.
! R2OH	39.274	183.669	30.125	300.	1000.	5000.
! R3OOH	14.437	222.902	35.987	300.	1000.	5000.
! R4CH3	143.408	194.128	36.678	300.	1000.	5000.
! R5CHO	37.590	224.455	34.695	300.	1000.	5000.
! R6CH2OH	-9.662	247.909	42.876	300.	1000.	5000.
! R7CH3O	17.533	227.382	36.372	300.	1000.	5000.
! R8CH3OO	21.606	263.667	57.487	300.	1000.	5000.
! R9C2HT	556.763	211.363	44.111	300.	1000.	5000.
! R10C2H3V	298.278	235.377	40.309	300.	1000.	5000.
! R11C2H5	118.487	246.337	47.564	300.	1000.	5000.
! R12CHCOV	177.596	254.145	52.864	300.	1000.	5000.
! R13CH2CHO	26.801	260.199	50.301	300.	1000.	5000.
! R14CH3CO	-10.097	270.027	50.563	300.	1000.	5000.
! R15C2H5O	-17.010	269.624	58.061	300.	1000.	5000.
! R16C2H4OOH	47.352	329.336	83.518	300.	1415.	5000.
! R17C2H5OO	-23.281	301.954	76.560	300.	1407.	5000.
! R18CH3COOO	-184.071	317.809	66.198	300.	1000.	5000.
! R19C3H7	100.931	284.094	73.114	300.	1000.	5000.

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! R20C4H9	74.796	324.440	96.944	300.	1000.	5000.
! R21C3H7	90.051	278.996	72.132	300.	1000.	5000.
! R22C3H7O	-40.852	341.406	99.075	300.	1392.	5000.
! R23C4H9O	-60.396	380.828	121.955	300.	1000.	5000.
! R24C3H7O	-63.873	333.086	101.684	300.	1393.	5000.
! R25C3H6OOH	6.500	369.497	106.090	300.	1393.	5000.
! R26C3H6OOH	18.091	368.827	106.939	300.	1394.	5000.
! R27C4H8OOH	-12.282	408.918	128.884	300.	1000.	5000.
! R28C4H8OOH	-12.282	408.920	128.476	300.	1000.	5000.
! R29C4H8OOH	-3.078	408.258	129.086	300.	1000.	5000.
! R30C3H6OOH	5.530	366.257	109.565	300.	1394.	5000.
! R31C3H6OOOOH	-138.492	417.650	133.409	300.	1000.	5000.
! R32C3H6OOOOH	-120.795	425.970	131.304	300.	1000.	5000.
! R33C4H8OOOOH	-159.272	462.839	156.265	300.	1000.	5000.
! R34C4H8OOOOH	-159.271	462.848	156.291	300.	1000.	5000.
! R35C4H8OOOOH	-141.574	459.642	154.201	300.	1000.	5000.
! R36C4H8OOH	-26.925	408.888	128.785	300.	1000.	5000.
! R37C3H6OOOOH	-138.492	417.642	133.422	300.	1000.	5000.
! R38C4H8OOOOH	-184.166	446.701	147.434	300.	1000.	5000.
! ZC3H5Y	163.584	258.871	63.383	200.	1000.	6000.
! ZC4H7Y	126.501	295.959	83.326	300.	1000.	3000.
! ZCOC2H5	-36.018	308.011	76.193	298.	1000.	5000.
! ZCOC2H3Z	72.379	269.517	62.544	200.	1000.	6000.
! ZCOC3H7	-64.563	349.156	101.676	300.	1376.	5000.
! ZCOOOC2H5	-113.805	340.996	106.999	300.	1366.	5000.
! ZCOOOC3H7	-134.436	380.418	129.783	300.	1372.	5000.
! ZC3H5O#4	110.325	293.950	69.055	298.	1000.	3000.
! ZC4H7O#4	78.204	315.145	83.255	300.	1372.	5000.
! ZOOC3H5O#4	-52.972	324.735	97.657	300.	1369.	5000.
! ZOOC4H7O#4	-91.884	355.817	120.373	300.	1377.	5000.
! ZC3H4O#4OOH	-10.080	348.416	96.940	300.	1372.	5000.
! ZC4H6O#4OOH	-48.992	379.498	122.431	300.	1382.	5000.
! ZOOC3H4O#4OOH	-156.617	395.159	130.146	300.	1383.	5000.
! ZOOC4H6O#4OOH	-195.529	426.230	158.371	300.	1385.	5000.
! N2	0.001	191.502	29.069	300.	1000.	5000.
! HE	0.000	126.035	20.785	300.	1000.	5000.
! AR	0.000	154.723	20.785	300.	1000.	5000.

!

! Thermodynamic summary was printed by program MECHMOD

!

THERMO ALL

	300.000	1000.000	5000.000							
B1O	O	1	0	0	OG	300.00	5000.00	1000.00	0	1
	2.54206000E+00	-2.75506200E-05	-3.10280300E-09	4.55106700E-12	-4.36805200E-16				2	
	2.92308000E+04	4.92030800E+00	2.94642900E+00	-1.63816600E-03	2.42103200E-06				3	
	-1.60284300E-09	3.89069600E-13	2.91476400E+04	2.96399500E+00					4	
B2CO	O	1C	1	0	OG	300.00	5000.00	1000.00	0	1
	3.02507800E+00	1.44268900E-03	-5.63082800E-07	1.01858100E-10	-6.91095200E-15				2	
	-1.42683500E+04	6.10821800E+00	3.26245200E+00	1.51194100E-03	-3.88175500E-06				3	
	5.58194400E-09	-2.47495100E-12	-1.43105400E+04	4.84889700E+00					4	
B3C	C	1	0	0	OG	300.00	5000.00	1000.00	0	1
	2.60208700E+00	-1.78708100E-04	9.08704100E-08	-1.14993300E-11	3.31084400E-16				2	
	8.54215400E+04	4.19517700E+00	2.49858500E+00	8.08577700E-05	-2.69769700E-07				3	
	3.04072900E-10	-1.10665200E-13	8.54587800E+04	4.75345900E+00					4	
B4CH	H	1C	1	0	OG	300.00	5000.00	1000.00	0	1
	2.19622300E+00	2.34038100E-03	-7.05820100E-07	9.00758200E-11	-3.85504000E-15				2	
	7.08672300E+04	9.17837300E+00	3.20020200E+00	2.07287600E-03	-5.13443100E-06				3	
	5.73389000E-09	-1.95553300E-12	7.04525900E+04	3.33158800E+00					4	
B5CH2	H	2C	1	0	OG	300.00	5000.00	1000.00	0	1
	3.63640800E+00	1.93305700E-03	-1.68701600E-07	-1.00989900E-10	1.80825600E-14				2	

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	4.53413400E+04	2.15656100E+00	3.76223700E+00	1.15981900E-03	2.48958500E-07	3
	8.80083600E-10	-7.33243500E-13	4.53679100E+04	1.71257800E+00		4
B6CH2	H	2C	1	0	OG	300.00 5000.00 1000.00 0 1
	3.55288900E+00	2.06678800E-03	-1.91411600E-07	-1.10467300E-10	2.02135000E-14	2
	4.98497500E+04	1.68657000E+00	3.97126500E+00	-1.69908900E-04	1.02536900E-06	3
	2.49255100E-09	-1.98126600E-12	4.98936800E+04	5.75320700E-02		4
H2	H	2	0	0	OG	300.00 5000.00 1000.00 0 1
	2.50170000E+00	1.78083000E-03	-7.80013000E-07	1.48437000E-10	-1.03401000E-14	2
	-6.86891000E+02	1.25553000E+00	3.43853000E+00	1.44314000E-04	-1.08191000E-07	3
	2.16839000E-10	-5.54307000E-14	-1.03749000E+03	-3.92682000E+00		4
H2O	H	2O	1	0	OG	300.00 5000.00 1000.00 0 1
	2.68039000E+00	3.09623000E-03	-9.31393000E-07	1.34865000E-10	-7.70007000E-15	2
	-2.99236000E+04	6.77857000E+00	3.97559000E+00	-4.41834000E-04	2.45596000E-06	3
	-1.24431000E-09	2.26702000E-13	-3.02810000E+04	7.71523000E-02		4
O2	O	2	0	0	OG	300.00 5000.00 1000.00 0 1
	3.19345000E+00	1.56657000E-03	-6.90657000E-07	1.32082000E-10	-9.23577000E-15	2
	-1.05228000E+03	5.96618000E+00	3.08809000E+00	1.60342000E-03	-5.34550000E-07	3
	2.80793000E-11	2.98899000E-15	-9.93828000E+02	6.61069000E+00		4
H2O2	H	2O	2	0	OG	300.00 5000.00 1000.00 0 1
	5.20269000E+00	3.07820000E-03	-8.47786000E-07	1.14867000E-10	-6.24436000E-15	2
	-1.81737000E+04	-2.81106000E+00	2.79724000E+00	9.30806000E-03	-3.27081000E-06	3
	-3.91853000E-09	2.63341000E-12	-1.75951000E+04	9.47142000E+00		4
CH4	H	4C	1	0	OG	300.00 5000.00 1000.00 0 1
	1.61991000E+00	1.03080000E-02	-3.71228000E-06	6.14185000E-10	-3.86748000E-14	2
	-1.00748000E+04	9.98982000E+00	2.31954000E+00	6.54738000E-03	-7.48051000E-07	3
	2.60912000E-09	-1.95537000E-12	-9.99764000E+03	7.24965000E+00		4
HCHO	H	2O	1C	1	OG	300.00 5000.00 1000.00 0 1
	2.91430000E+00	6.64407000E-03	-2.45282000E-06	4.12836000E-10	-2.63040000E-14	2
	-1.52827000E+04	7.43680000E+00	2.41049000E+00	7.02041000E-03	-4.22947000E-06	3
	4.40116000E-09	-2.12647000E-12	-1.49519000E+04	1.06246000E+01		4
CH3OH	H	4O	1C	1	OG	300.00 5000.00 1000.00 0 1
	3.27626000E+00	1.05432000E-02	-3.54918000E-06	5.58743000E-10	-3.39236000E-14	2
	-2.58917000E+04	6.60656000E+00	1.85957000E+00	1.25312000E-02	-4.47107000E-06	3
	1.73293000E-09	-8.71066000E-13	-2.52879000E+04	1.46835000E+01		4
CO2	O	2C	1	0	OG	300.00 5000.00 1000.00 0 1
	2.73827000E+00	6.09914000E-03	-2.81755000E-06	5.57282000E-10	-3.99470000E-14	2
	-4.82637000E+04	8.67355000E+00	2.67844000E+00	6.31159000E-03	1.20975000E-06	3
	-7.46647000E-09	3.79399000E-12	-4.84134000E+04	8.57691000E+00		4
CH3OOH	H	4O	2C	1	OG	300.00 5000.00 1000.00 0 1
	6.37596000E+00	1.07372000E-02	-3.68666000E-06	5.88827000E-10	-3.61266000E-14	2
	-1.84341000E+04	-6.12840000E+00	3.09218000E+00	1.80223000E-02	-7.11862000E-06	3
	-1.47978000E-09	1.45517000E-12	-1.74300000E+04	1.13028000E+01		4
C2H2T	H	2C	2	0	OG	300.00 5000.00 1000.00 0 1
	3.00338000E+00	7.58476000E-03	-3.11008000E-06	5.64312000E-10	-3.79570000E-14	2
	2.62468000E+04	5.29247000E+00	2.54593000E+00	1.14007000E-02	-7.07123000E-06	3
	-6.00363000E-10	1.71894000E-12	2.60564000E+04	6.56609000E+00		4
C2H4Z	H	4C	2	0	OG	300.00 5000.00 1000.00 0 1
	3.99720000E-01	1.67299000E-02	-6.80909000E-06	1.22922000E-09	-8.23928000E-14	2
	5.63749000E+03	1.97729000E+01	1.31810000E+00	1.44460000E-02	-2.74335000E-06	3
	-3.10835000E-09	1.52772000E-12	5.26817000E+03	1.47233000E+01		4
C2H6	H	6C	2	0	OG	300.00 5000.00 1000.00 0 1
	3.94109000E-01	2.11928000E-02	-8.08560000E-06	1.39339000E-09	-9.03005000E-14	2
	-1.10714000E+04	1.96366000E+01	9.75454000E-01	1.88110000E-02	-1.46453000E-06	3
	-6.38247000E-09	2.84067000E-12	-1.13111000E+04	1.65514000E+01		4
CH2CO	H	2O	1C	2	OG	300.00 5000.00 1000.00 0 1
	5.35267000E+00	6.94209000E-03	-2.50061000E-06	4.13231000E-10	-2.59692000E-14	2
	-7.81007000E+03	-3.80283000E+00	2.99539000E+00	1.23540000E-02	-4.06499000E-06	3
	-3.34608000E-09	2.24152000E-12	-7.15097000E+03	8.53716000E+00		4
CH3CHO	H	4O	1C	2	OG	300.00 5000.00 1399.00 0 1
	4.51972824E+00	1.17700048E-02	-3.75830216E-06	5.44798539E-10	-2.98230765E-14	2

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-2.34197108E+04	2.18555589E+00	3.41239058E+00	1.33720451E-02	-4.31103682E-06	3					
4.43492976E-10	2.89819827E-14	-2.28998293E+04	8.54236977E+00		4					
C2H5OH	H	6O	1C	2	OG	300.00	5000.00	1000.00	0	1
5.62516000E+00	1.59916000E-02	-5.36799000E-06	8.43422000E-10	-5.11406000E-14	2					
-3.10498000E+04	-3.61961000E+00	9.39858000E-01	2.61811000E-02	-9.25134000E-06	3					
-3.45825000E-09	2.62098000E-12	-2.96238000E+04	2.12634000E+01		4					
C2H5OOH	H	6O	2C	2	OG	300.00	5000.00	1000.00	0	1
8.86549000E+00	1.46991000E-02	-4.66630000E-06	7.03129000E-10	-4.13262000E-14	2					
-2.34663000E+04	-1.74646000E+01	2.03266000E+00	3.20310000E-02	-1.79773000E-05	3					
2.38766000E-09	1.07206000E-12	-2.15063000E+04	1.82187000E+01		4					
CH3COOOH	H	4O	3C	2	OG	300.00	5000.00	1000.00	0	1
7.87651000E+00	1.42400000E-02	-4.81648000E-06	7.62396000E-10	-4.65514000E-14	2					
-4.39851000E+04	-9.71105000E+00	2.19569000E-01	3.53131000E-02	-2.24276000E-05	3					
3.22888000E-09	1.67243000E-12	-4.19548000E+04	2.96617000E+01		4					
C3H6Y	H	6C	3	0	OG	300.00	5000.00	1000.00	0	1
5.00264930E+00	1.76389930E-02	-6.22663080E-06	1.01514330E-09	-6.32359770E-14	2					
-2.70561520E+02	-2.47234340E+00	5.55982830E-01	2.70915310E-02	-1.07521040E-05	3					
-9.75392100E-10	1.43147210E-12	1.15701900E+03	2.13441730E+01		4					
C3H8	H	8C	3	0	OG	300.00	5000.00	1000.00	0	1
5.46388480E+00	2.21605690E-02	-7.72962810E-06	1.24954760E-09	-7.73776050E-14	2					
-1.56293740E+04	-6.23091510E+00	-3.18318960E-01	3.47464050E-02	-1.28850180E-05	3					
-3.50570370E-09	3.01653580E-12	-1.38515940E+04	2.45145950E+01		4					
C4H8Y	H	8C	4	0	OG	300.00	5000.00	1000.00	0	1
9.30019470E+00	1.98714620E-02	-6.57139750E-06	1.02588880E-09	-6.21603940E-14	2					
-4.66497070E+03	-2.42603000E+01	-2.58697420E-01	4.14754970E-02	-2.13176860E-05	3					
2.79188210E-09	8.57493110E-13	-1.61809580E+03	2.67207180E+01		4					
C4H10	H	10C	4	0	OG	300.00	5000.00	1000.00	0	1
7.71333170E+00	2.77676140E-02	-9.61563270E-06	1.54560560E-09	-9.52812790E-14	2					
-1.94252400E+04	-1.62624510E+01	5.99795840E-02	4.40055800E-02	-1.55321270E-05	3					
-5.28063150E-09	4.04421160E-12	-1.70400450E+04	2.45658490E+01		4					
C2H5CHO	H	6O	1C	3	OG	300.00	5000.00	1000.00	0	1
7.01077220E+00	1.80134480E-02	-6.22952170E-06	1.00058390E-09	-6.16617220E-14	2					
-2.56914570E+04	-9.54882810E+00	2.82770230E+00	2.54303650E-02	-6.19132200E-06	3					
-5.02451770E-09	2.67856090E-12	-2.42713480E+04	1.32340890E+01		4					
C3H7OH	H	8O	1C	3	OG	300.00	5000.00	1000.00	0	1
7.16746810E+00	2.24666240E-02	-7.62923720E-06	1.20972310E-09	-7.38840750E-14	2					
-3.46867730E+04	-9.53935620E+00	1.23506930E+00	3.44532840E-02	-1.05891330E-05	3					
-5.48568040E-09	3.51469940E-12	-3.28049380E+04	2.22681480E+01		4					
C2H6CO	H	6O	1C	3	OG	300.00	5000.00	1000.00	0	1
5.99759960E+00	1.96790970E-02	-7.01545740E-06	1.15135790E-09	-7.20354160E-14	2					
-2.93626560E+04	-5.52547840E+00	1.45778270E+00	2.80637150E-02	-9.02185180E-06	3					
-2.45367060E-09	1.67302320E-12	-2.77941040E+04	1.92184540E+01		4					
C3H8CO	H	8O	1C	4	OG	300.00	5000.00	1000.00	0	1
8.78889470E+00	2.41740100E-02	-8.34464030E-06	1.33766480E-09	-8.22718220E-14	2					
-3.30183670E+04	-1.78194890E+01	2.73165180E+00	3.58153580E-02	-1.10850160E-05	3					
-4.45162260E-09	2.84358730E-12	-3.10061890E+04	1.49496040E+01		4					
C4H6Z2	H	6C	4	0	OG	300.00	5000.00	1000.00	0	1
8.05184560E+00	1.75408890E-02	-6.17606570E-06	1.00476560E-09	-6.24795420E-14	2					
9.56979490E+03	-1.86117100E+01	-2.92244730E-01	3.87252010E-02	-1.67067190E-05	3					
-8.10809020E-09	6.74215410E-12	1.17492360E+04	2.44447020E+01		4					
C2H3CHOZ	H	4O	1C	3	OG	300.00	5000.00	1000.00	0	1
1.23118860E+01	1.29615880E-02	-6.17746540E-06	1.25014050E-09	-9.11699710E-14	2					
-1.52189510E+04	-4.23031770E+01	9.31374370E-01	3.55744180E-02	-3.33472640E-05	3					
2.83980340E-08	-1.13956440E-11	-1.06143290E+04	2.10594920E+01		4					
C2H5COOOH	H	6O	3C	3	OG	300.00	5000.00	1382.00	0	1
1.55011716E+01	1.41508466E-02	-4.91558149E-06	7.71160485E-10	-4.50686845E-14	2					
-3.87511819E+04	-5.34551375E+01	4.33718410E+00	3.87006528E-02	-2.56101058E-05	3					
8.82869519E-09	-1.28056545E-12	-3.46612406E+04	7.14689908E+00		4					
C3H7COOOH	H	8O	3C	4	OG	300.00	5000.00	1384.00	0	1
1.86661024E+01	1.86528023E-02	-6.46268618E-06	1.01209734E-09	-5.90769296E-14	2					

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-4.28478877E+04-6.90276371E+01 4.14340879E+00	5.07622570E-02-3.36580809E-05	3
1.16258711E-08-1.68413032E-12-3.75540717E+04	9.72899770E+00	4
C3H7OOH H 80 2C 3 OG	300.00 5000.00 1000.00	0 1
1.15500000E+01 2.00116000E-02-6.48304000E-06	9.93973000E-10-5.92885000E-14	2
-2.95948000E+04-3.09692000E+01 1.41922000E+00	4.71105000E-02-2.83636000E-05	3
3.70396000E-09 2.12765000E-12-2.68348000E+04	2.14033000E+01	4
C3H5OOHZ H 60 2C 3 OG	300.00 5000.00 1000.00	0 1
1.07324000E+01 1.59187000E-02-5.14924000E-06	7.88093000E-10-4.69232000E-14	2
-1.11389000E+04-2.54876000E+01 1.25506000E+00	4.17942000E-02-2.72182000E-05	3
5.00056000E-09 1.39913000E-12-8.58542000E+03	2.33725000E+01	4
C3H7CHO H 80 1C 4 OG	300.00 5000.00 1000.00	0 1
8.11156000E+00 2.54239000E-02-8.96011000E-06	1.45917000E-09-9.08294000E-14	2
-2.99254000E+04-1.52603000E+01-1.14394000E+00	4.85922000E-02-2.49936000E-05	3
4.93978000E-10 2.97345000E-12-2.72812000E+04	3.30785000E+01	4
C4H9OH H 100 1C 4 OG	300.00 5000.00 1000.00	0 1
9.74596000E+00 2.77326000E-02-9.38444000E-06	1.48350000E-09-9.03664000E-14	2
-3.91909000E+04-2.34734000E+01 1.11535000E-02	5.09795000E-02-2.33511000E-05	3
-1.86774000E-09 3.69534000E-12-3.63433000E+04	2.76793000E+01	4
C4H10O H 100 1C 4 OG	300.00 5000.00 1000.00	0 1
1.01807000E+01 2.77890000E-02-9.51259000E-06	1.51652000E-09-9.29478000E-14	2
-3.53741000E+04-2.64667000E+01-7.61343000E-01	5.76814000E-02-3.68938000E-05	3
9.63579000E-09 1.86539000E-13-3.23368000E+04	3.01404000E+01	4
C4H10OO H 100 2C 4 OG	300.00 5000.00 1000.00	0 1
1.29241000E+01 2.61230000E-02-8.47337000E-06	1.29750000E-09-7.71743000E-14	2
-2.99469000E+04-3.61084000E+01 3.70657000E+00	4.21979000E-02-5.20159000E-06	3
-1.68287000E-08 7.91854000E-12-2.69251000E+04	1.38960000E+01	4
C5H12 H 12C 5 0 OG	300.00 5000.00 1000.00	0 1
5.76039000E+00 4.07904000E-02-1.51216000E-05	2.55218000E-09-1.62906000E-13	2
-2.23578000E+04-3.87465000E+00-2.51012000E-01	5.37447000E-02-1.29532000E-05	3
-1.58241000E-08 9.07402000E-12-2.07997000E+04	2.74284000E+01	4
C6H14 H 14C 6 0 OG	300.00 5000.00 1000.00	0 1
8.54582000E+00 4.51466000E-02-1.63371000E-05	2.70982000E-09-1.70819000E-13	2
-2.64507000E+04-1.89406000E+01-8.92515000E-01	6.70272000E-02-2.06748000E-05	3
-1.57374000E-08 1.01429000E-11-2.39577000E+04	3.01160000E+01	4
C4H9OOH H 100 2C 4 OG	300.00 5000.00 1000.00	0 1
1.29176000E+01 2.65019000E-02-8.69978000E-06	1.34539000E-09-8.06772000E-14	2
-3.08083000E+04-3.52243000E+01 1.97950000E+00	5.34491000E-02-2.68646000E-05	3
2.22989000E-10 3.18353000E-12-2.76611000E+04	2.20264000E+01	4
C3H5OHY H 60 1C 3 OG	300.00 5000.00 1395.00	0 1
9.88175227E+00 1.41071652E-02-4.77340838E-06	7.35645053E-10-4.24588927E-14	2
-1.98672434E+04-2.55802086E+01 1.46748705E+00	3.11728503E-02-1.69310169E-05	3
4.14326559E-09-3.02321386E-13-1.66846400E+04	2.05298769E+01	4
C3H5OOHY H 60 2C 3 OG	300.00 5000.00 1386.00	0 1
1.38848040E+01 1.34942718E-02-4.70978184E-06	7.41183011E-10-4.34097816E-14	2
-1.36631099E+04-4.48841928E+01 1.86604908E+00	4.11015023E-02-2.92829961E-05	3
1.08977747E-08-1.69153504E-12-9.39718504E+03	1.99070231E+01	4
C3H5CHOY H 60 1C 4 OG	300.00 5000.00 1390.00	0 1
1.22779744E+01 1.50276207E-02-5.18156992E-06	8.08837547E-10-4.71056527E-14	2
-1.50989405E+04-3.71915404E+01 1.65157204E-01	4.25473578E-02-2.91442781E-05	3
1.03795766E-08-1.53237179E-12-1.07865407E+04	2.81847148E+01	4
C4H7OHY H 80 1C 4 OG	300.00 5000.00 1398.00	0 1
1.30788210E+01 1.85230338E-02-6.27756606E-06	9.68479017E-10-5.59381265E-14	2
-2.45605264E+04-4.11505309E+01-1.37549203E-01	4.93449174E-02-3.39460463E-05	3
1.23694508E-08-1.87481041E-12-1.99486433E+04	2.98750921E+01	4
C4H8OOY H 80 2C 4 OG	300.00 5000.00 1370.00	0 1
1.74916628E+01 1.81345684E-02-6.42302084E-06	1.02076107E-09-6.01940065E-14	2
-1.58182193E+04-6.35987182E+01 1.90647838E+00	4.89109563E-02-2.79911531E-05	3
7.20625111E-09-6.28672871E-13-9.76096456E+03	2.22422275E+01	4
C5H10Y H 10C 5 0 OG	300.00 5000.00 1000.00	0 1
1.25414540E+01 2.39410700E-02-7.74455290E-06	1.11579700E-09-5.79681160E-14	2

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-8.71753520E+03-3.98541870E+01 1.76278590E+00	3.89027890E-02 5.83807740E-06	3
-3.05471880E-08 1.38394650E-11-4.81098830E+03	1.99291690E+01	4
C6H10Y2 H 10C 6 0 OG	300.00 5000.00 1394.00	0 1
1.67217463E+01 2.30066038E-02-7.81321610E-06	1.20733762E-09-6.98211623E-14	2
1.74061614E+03-6.19703111E+01-1.69533615E+00	6.66545239E-02-4.77589782E-05	3
1.80256371E-08-2.81405574E-12 8.08617303E+03	3.67394156E+01	4
C7H12Y2 H 12C 7 0 OG	300.00 5000.00 1396.00	0 1
1.98660497E+01 2.77160810E-02-9.47092500E-06	1.46936866E-09-8.52053723E-14	2
-3.37529180E+03-7.81738585E+01-2.53749115E+00	8.15910888E-02-5.98831800E-05	3
2.33002785E-08-3.75937047E-12 4.28827464E+03	4.16621541E+01	4
C4H7OOHY H 8O 2C 4 OG	300.00 5000.00 1394.00	0 1
1.79375119E+01 1.72174384E-02-5.98236489E-06	9.38625383E-10-5.48584632E-14	2
-2.02800828E+04-6.64460150E+01-8.02160384E-01	6.65653438E-02-5.74809844E-05	3
2.59065677E-08-4.71885440E-12-1.42637965E+04	3.23319826E+01	4
C4H7CHOY H 8O 1C 5 OG	300.00 5000.00 1392.00	0 1
1.55272798E+01 1.94132098E-02-6.67873114E-06	1.04096477E-09-6.05601494E-14	2
-2.08051701E+04-5.47597062E+01 3.55212065E-01	5.29829528E-02-3.45802895E-05	3
1.14186391E-08-1.52124882E-12-1.53375159E+04	2.74068341E+01	4
C5H9OHY H 10O 1C 5 OG	300.00 5000.00 1399.00	0 1
1.63384517E+01 2.30201886E-02-7.83863712E-06	1.21313662E-09-7.02226862E-14	2
-2.97114608E+04-5.86732076E+01-1.03262062E+00	6.44536481E-02-4.61800748E-05	3
1.75936750E-08-2.78637230E-12-2.37373629E+04	3.43604158E+01	4
C5H10OOY H 10O 2C 5 OG	300.00 5000.00 1382.00	0 1
2.15082665E+01 2.19318417E-02-7.73052806E-06	1.22460940E-09-7.20536565E-14	2
-2.24263013E+04-8.38696882E+01-6.48485664E-01	7.38949172E-02-5.55213692E-05	3
2.18458251E-08-3.58363815E-12-1.46452152E+04	3.52366747E+01	4
C6H12Y H 12C 6 0 OG	300.00 5000.00 1395.00	0 1
1.77681357E+01 2.70598089E-02-9.26733689E-06	1.43984244E-09-8.35734662E-14	2
-1.52246140E+04-6.94907548E+01-1.88517246E+00	7.22265975E-02-4.93214783E-05	3
1.78284888E-08-2.69730835E-12-8.26543537E+03	3.64219244E+01	4
C8H14Y2 H 14C 8 0 OG	300.00 5000.00 1397.00	0 1
2.31209813E+01 3.22680357E-02-1.10624178E-05	1.71999535E-09-9.98875058E-14	2
-8.54335378E+03-9.64047362E+01-3.38984195E+00	9.64674127E-02-7.17773104E-05	3
2.83638558E-08-4.64869170E-12 4.94451642E+02	4.52655902E+01	4
C2H4O#3 H 4O 1C 2 OG	300.00 5000.00 1387.00	0 1
6.92819484E+00 1.03517910E-02-3.59464333E-06	5.63735765E-10-3.29363477E-14	2
-1.12398916E+04-1.56957700E+01-1.01424206E+00	2.78706260E-02-1.83781735E-05	3
6.30188267E-09-9.04898236E-13-8.33990233E+03	2.73914997E+01	4
C3H6O#3 H 6O 1C 3 OG	300.00 5000.00 1000.00	0 1
7.29482000E+00 1.84105000E-02-6.54108000E-06	1.07188000E-09-6.70432000E-14	2
-1.50956000E+04-1.44063000E+01 9.39739000E-02	3.50454000E-02-2.55405000E-05	3
1.69102000E-08-6.38433000E-12-1.25752000E+04	2.45001000E+01	4
C3H6O#4 H 6O 1C 3 OG	300.00 5000.00 1000.00	0 1
-2.80859000E-01 3.28683000E-02-1.41730000E-05	2.66755000E-09-1.84356000E-13	2
-1.13051000E+04 2.38104000E+01 1.54114000E+00	1.02641000E-02 4.43080000E-05	3
-5.54504000E-08 2.02306000E-11-1.08722000E+04	1.88571000E+01	4
C4H8O#3 H 8O 1C 4 OG	300.00 5000.00 1000.00	0 1
9.75667000E+00 2.33722000E-02-8.08778000E-06	1.30078000E-09-8.02979000E-14	2
-1.83335000E+04-2.57165000E+01 6.02762000E-01	3.82920000E-02-7.02209000E-07	3
-2.16641000E-08 9.74427000E-12-1.53251000E+04	2.41026000E+01	4
C4H8O#4 H 8O 1C 4 OG	300.00 5000.00 1000.00	0 1
3.09027000E+00 3.72761000E-02-1.54453000E-05	2.82467000E-09-1.91145000E-13	2
-1.75541000E+04 7.60218000E+00-7.66923000E+00	8.33709000E-02-1.00216000E-04	3
7.32260000E-08-2.13133000E-11-1.49612000E+04	6.00300000E+01	4
C6H10Z#6 H 10C 6 0 OG	200.00 6000.00 1000.00	0 1
1.17739040E+01 3.09473600E-02-1.12343300E-05	1.82624940E-09-1.09851190E-13	2
-7.20283760E+03-4.26586880E+01 2.36623780E+00	1.06817120E-02 1.18221120E-04	3
-1.65678540E-07 6.76128020E-11-2.48249730E+03	1.67693570E+01	4
C2H3O#4COOOH H 4O 4C 3 OG	300.00 5000.00 1368.00	0 1
1.69484071E+01 1.16715155E-02-4.16367533E-06	6.64879990E-10-3.93390798E-14	2

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-5.63371508E+04-6.33269067E+01	4.97662680E+00	3.63573794E-02-2.27519030E-05	3
6.71990582E-09-7.57035291E-13-5.18098074E+04	2.20675322E+00		4
C3H5O#4COOOH	H 6O 4C 4 OG	300.00 5000.00 1387.00	0 1
1.88261331E+01 1.87642383E-02-6.78514832E-06	1.07809588E-09-6.29638971E-14		2
-6.17149859E+04-7.33527449E+01 3.10549005E+00	5.48107175E-02-3.87129006E-05		3
1.41619689E-08-2.16124749E-12-5.61370730E+04	1.14031401E+01		4
R1H	H 1 0 0 OG	300.00 5000.00 1000.00	0 1
2.51382000E+00 4.09189000E-06-2.41082000E-09	5.71874000E-13-4.70917000E-17		2
2.54654000E+04-5.34746000E-01 2.51984000E+00-2.59920000E-05	6.27898000E-08		3
-6.29951000E-11 2.23973000E-14 2.54641000E+04-5.63259000E-01			4
R2OH	H 1O 1 0 OG	300.00 5000.00 1000.00	0 1
3.04144000E+00 6.51385000E-04-1.91218000E-08-1.04196000E-13	4.00330000E-17		2
3.90412000E+03 4.81762000E+00 3.67780000E+00-2.14153000E-04	5.70231000E-08		3
1.71404000E-10-1.84629000E-14 3.63597000E+03	1.19670000E+00		4
R3OOH	H 1O 2 0 OG	300.00 5000.00 1000.00	0 1
5.23478510E+00 7.78144870E-04-7.06623310E-08	5.46766930E-12-2.85448520E-16		2
-2.95903320E+01-3.67735670E+00 1.48979600E+00	1.35345300E-02-1.58687740E-05		3
8.62084450E-09-1.82699880E-12 8.14742070E+02	1.49196660E+01		4
R4CH3	H 3C 1 0 OG	300.00 5000.00 1000.00	0 1
1.02702000E+00 9.49641000E-03-3.82860000E-06	6.86498000E-10-4.57900000E-14		2
1.67624000E+04 1.53006000E+01 2.94974000E+00	5.11940000E-03-8.75334000E-07		3
6.64224000E-10-5.42393000E-13 1.61486000E+04	5.05087000E+00		4
R5CHO	H 1O 1C 1 OG	300.00 5000.00 1000.00	0 1
3.60940910E+00 2.87452620E-03-9.87888140E-07	1.58403230E-10-9.77351760E-15		2
3.23210350E+03 5.43047140E+00 3.53402730E+00	2.02347310E-03 5.18340810E-07		3
-3.72460760E-10-6.08028570E-14 3.37385740E+03	6.23884010E+00		4
R6CH2OH	H 3O 1C 1 OG	300.00 5000.00 1000.00	0 1
5.93323140E+00 3.61905010E-03-6.17527520E-07	5.90836340E-11-2.56986200E-15		2
-3.61820650E+03-6.17330550E+00 2.19664240E+00	1.29632020E-02-1.28443800E-05		3
9.91455980E-09-3.22312250E-12-2.29783420E+03	1.39273870E+01		4
R7CH3O	H 3O 1C 1 OG	300.00 5000.00 1000.00	0 1
5.59226800E+00 4.39604740E-03-8.63939190E-07	9.20933470E-11-4.30128070E-15		2
-4.39009280E+02-7.28133010E+00 7.20297100E-01	1.51383550E-02-1.16431340E-05		3
7.33661310E-09-2.33887870E-12 1.31065820E+03	1.91891500E+01		4
R8CH3OO	H 3O 2C 1 OG	300.00 5000.00 1000.00	0 1
8.02230640E+00 5.44526060E-03-1.22918850E-06	1.45793450E-10-7.33809040E-15		2
-6.40058590E+02-1.69487950E+01 1.77592210E+00	2.19173360E-02-1.81584020E-05		3
8.81693470E-09-1.97437680E-12 1.23898170E+03	1.57936120E+01		4
R9C2HT	H 1C 2 0 OG	300.00 5000.00 1000.00	0 1
4.04374930E+00 3.61233550E-03-9.59460290E-07	1.27933720E-10-6.95266120E-15		2
6.59479610E+04 1.97035220E+00 1.77181960E+00	1.70701460E-02-2.00735900E-05		3
8.87795260E-09-8.33041590E-13 6.58400780E+04	1.10533920E+01		4
R10C2H3V	H 3C 2 0 OG	300.00 5000.00 1000.00	0 1
5.05883600E+00 5.40125560E-03-1.21193580E-06	1.42714060E-10-7.12726560E-15		2
3.37216950E+04-3.00214770E+00 1.23165540E+00	1.46593540E-02-9.51360200E-06		3
3.64669490E-09-6.26403390E-13 3.49349100E+04	1.73146400E+01		4
R11C2H5	H 5C 2 0 OG	300.00 5000.00 1000.00	0 1
3.50261000E+00 1.26143000E-02-3.65730000E-06	5.16642000E-10-2.90469000E-14		2
1.24032000E+04 5.44236000E+00 5.46580000E-01	2.04368000E-02-1.16694000E-05		3
4.82541000E-09-1.19281000E-12 1.32743000E+04	2.09001000E+01		4
R12CHCOV	H 1O 1C 2 OG	300.00 5000.00 1000.00	0 1
6.75807300E+00 2.00040000E-03-2.02760700E-07-1.04113200E-10	1.96516500E-14		2
1.90151300E+04-9.07126200E+00 5.04796500E+00	4.45347800E-03 2.26828300E-07		3
-1.48209500E-09 2.25074200E-13 1.96589200E+04	4.81843900E-01		4
R13CH2CHO	H 3O 1C 2 OG	300.00 5000.00 1000.00	0 1
5.97600000E+00 8.13100000E-03-2.74400000E-06	4.07000000E-10-2.17600000E-14		2
4.90300000E+02-5.04500000E+00-5.49040000E+01	4.51253000E-01-1.17037000E-03		3
1.30375000E-06-5.19201000E-10 7.54530000E+03	2.51103000E+02		4
R14CH3CO	H 3O 1C 2 OG	300.00 5000.00 1000.00	0 1
1.09371840E+01 5.44143490E-04-1.58658760E-08-2.31073920E-13	4.62528230E-17		2

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-6.07338090E+03-3.33421250E+01 3.85792660E+00	5.40231490E-03 9.49966670E-06	3
-9.34900250E-09 2.06671940E-12-2.67119410E+03	8.54330640E+00	4
R15C2H5O H 50 1C 2 OG	300.00 5000.00 1000.00	0 1
8.79327000E+00 8.37917000E-03-1.93446000E-06	2.29371000E-10-1.13191000E-14	2
-6.03107000E+03-2.23324000E+01-6.00093000E-01	3.17670000E-02-2.42586000E-05	3
1.08137000E-08-2.26856000E-12-3.08491000E+03	2.73650000E+01	4
R16C2H4OOH H 50 2C 2 OG	300.00 5000.00 1415.00	0 1
9.19614034E+00 1.19236715E-02-3.78623394E-06	5.57327143E-10-3.10995484E-14	2
1.92687229E+03-1.73342876E+01 2.06672037E+00	3.51060666E-02-3.25950183E-05	3
1.64174979E-08-3.25549833E-12 3.77600217E+03	1.86800828E+01	4
R17C2H5OO H 50 2C 2 OG	300.00 5000.00 1407.00	0 1
9.14240068E+00 1.27542434E-02-4.24151458E-06	6.45607741E-10-3.69255491E-14	2
-6.97579168E+03-2.13194222E+01 9.01075086E-01	3.53849497E-02-2.89014798E-05	3
1.30444255E-08-2.41434493E-12-4.41092930E+03	2.18088870E+01	4
R18CH3COOO H 30 3C 2 OG	300.00 5000.00 1000.00	0 1
5.83706190E+00 1.45179370E-02-4.58537810E-06	6.92389650E-10-4.09728880E-14	2
-2.46367970E+04 3.56861110E-01-1.09234320E+00	3.91621440E-02-3.33218890E-05	3
1.33454560E-08-1.68048130E-12-2.32860210E+04	3.41397290E+01	4
R19C3H7 H 7C 3 0 OG	300.00 5000.00 1000.00	0 1
4.90850000E+00 1.95492000E-02-6.09862000E-06	9.08986000E-10-5.30994000E-14	2
9.72711000E+03 2.41566000E-01-9.97049000E-01	4.22637000E-02-3.67683000E-05	3
1.83985000E-08-3.66617000E-12 1.08489000E+04	2.87294000E+01	4
R20C4H9 H 9C 4 0 OG	300.00 5000.00 1000.00	0 1
7.04485000E+00 2.53221000E-02-8.04531000E-06	1.21383000E-09-7.14512000E-14	2
5.52642000E+03-9.13080000E+00-5.06119000E-01	5.07221000E-02-3.74398000E-05	3
1.45966000E-08-1.90079000E-12 7.19571000E+03	2.83231000E+01	4
R21C3H7 H 7C 3 0 OG	300.00 5000.00 1000.00	0 1
6.86823000E+00 1.61443000E-02-4.60387000E-06	6.41404000E-10-3.56487000E-14	2
7.53026000E+03-1.15057000E+01 7.75611000E-01	3.08041000E-02-1.47528000E-05	3
5.39690000E-10 1.67448000E-12 9.35939000E+03	2.06017000E+01	4
R22C3H7OO H 7O 2C 3 OG	300.00 5000.00 1392.00	0 1
1.36152355E+01 1.54856586E-02-5.29653835E-06	8.58043338E-10-5.20491162E-14	2
-1.12872035E+04-4.43946340E+01 5.77276290E-01	4.75704860E-02-3.61204834E-05	3
1.45739973E-08-2.42057865E-12-6.90864049E+03	2.50732368E+01	4
R23C4H9OO H 9O 2C 4 OG	300.00 5000.00 1000.00	0 1
1.58522000E+01 1.90655000E-02-5.20132000E-06	7.01589000E-10-3.81205000E-14	2
-1.42345000E+04-5.32522000E+01 7.06940000E-01	5.70736000E-02-3.73723000E-05	3
1.01403000E-08-1.76347000E-13-9.70166000E+03	2.63331000E+01	4
R24C3H7OO H 7O 2C 3 OG	300.00 5000.00 1393.00	0 1
1.42125805E+01 1.51915551E-02-5.35268994E-06	8.90393261E-10-5.49823461E-14	2
-1.42534776E+04-4.87886410E+01 5.74488480E-01	4.92541727E-02-3.85714205E-05	3
1.58709804E-08-2.66959437E-12-9.73238987E+03	2.36843304E+01	4
R25C3H6OOH H 7O 2C 3 OG	300.00 5000.00 1393.00	0 1
1.36435123E+01 1.45580710E-02-4.87405385E-06	7.93445831E-10-4.87443480E-14	2
-5.28647810E+03-4.03274923E+01 3.12745634E+00	3.99439256E-02-2.88033029E-05	3
1.12667479E-08-1.83417457E-12-1.69290631E+03	1.58988310E+01	4
R26C3H6OOH H 7O 2C 3 OG	300.00 5000.00 1394.00	0 1
1.40620950E+01 1.45235277E-02-5.03881569E-06	8.44287285E-10-5.28085231E-14	2
-4.08004247E+03-4.29224890E+01 2.75659469E+00	4.22502526E-02-3.16070765E-05	3
1.26473142E-08-2.08922654E-12-2.68579798E+02	1.73565547E+01	4
R27C4H8OOH H 9O 2C 4 OG	300.00 5000.00 1000.00	0 1
1.62621000E+01 1.75288000E-02-4.51383000E-06	5.82391000E-10-3.06082000E-14	2
-8.28277000E+03-5.12759000E+01 7.20942000E-01	6.62556000E-02-6.70288000E-05	3
4.02798000E-08-1.03878000E-11-4.11955000E+03	2.79664000E+01	4
R28C4H8OOH H 9O 2C 4 OG	300.00 5000.00 1000.00	0 1
1.60694000E+01 1.79020000E-02-4.66799000E-06	6.08503000E-10-3.22494000E-14	2
-8.25286000E+03-5.03054000E+01 1.73881000E+00	5.90464000E-02-5.08822000E-05	3
2.55120000E-08-5.51809000E-12-4.21839000E+03	2.37199000E+01	4
R29C4H8OOH H 9O 2C 4 OG	300.00 5000.00 1000.00	0 1
1.66395000E+01 1.74604000E-02-4.53185000E-06	5.88696000E-10-3.11177000E-14	2

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-7.36086000E+03-5.36611000E+01 1.06688000E+00	6.28975000E-02-5.63346000E-05	3
2.88426000E-08-6.34414000E-12-3.04015000E+03	2.65350000E+01	4
R30C3H6OOH H 7O 2C 3 OG	300.00 5000.00 1394.00	0 1
1.45405806E+01 1.44550560E-02-5.23355641E-06	9.06948302E-10-5.78989023E-14	2
-5.74306895E+03-4.59703493E+01 2.78233148E+00	4.37882032E-02-3.38271815E-05	3
1.38030120E-08-2.30936979E-12-1.83795193E+03	1.65311464E+01	4
R31C3H6OOOOH H 7O 4C 3 OG	300.00 5000.00 1000.00	0 1
1.90484000E+01 1.26718000E-02-2.97004000E-06	3.54256000E-10-1.74466000E-14	2
-2.42266000E+04-6.50764000E+01 2.13126000E+00	5.97630000E-02-4.91660000E-05	3
1.81720000E-08-1.82122000E-12-1.95501000E+04	2.23015000E+01	4
R32C3H6OOOOH H 7O 4C 3 OG	300.00 5000.00 1000.00	0 1
1.83522000E+01 1.33235000E-02-3.20553000E-06	3.94529000E-10-2.01319000E-14	2
-2.19050000E+04-6.02423000E+01 2.64693000E+00	5.58589000E-02-4.42549000E-05	3
1.66943000E-08-2.10627000E-12-1.74420000E+04	2.13235000E+01	4
R33C4H8OOOOH H 9O 4C 4 OG	300.00 5000.00 1000.00	0 1
2.13086000E+01 1.80823000E-02-4.66794000E-06	6.05601000E-10-3.20764000E-14	2
-2.78255000E+04-7.45260000E+01 2.02352000E+00	7.10191000E-02-5.48767000E-05	3
1.82994000E-08-1.17364000E-12-2.24677000E+04	2.52460000E+01	4
R34C4H8OOOOH H 9O 4C 4 OG	300.00 5000.00 1000.00	0 1
2.13425000E+01 1.80205000E-02-4.63077000E-06	5.96639000E-10-3.13283000E-14	2
-2.78391000E+04-7.47135000E+01 2.18015000E+00	6.99382000E-02-5.22933000E-05	3
1.57326000E-08-2.69049000E-13-2.24845000E+04	2.45830000E+01	4
R35C4H8OOOOH H 9O 4C 4 OG	300.00 5000.00 1000.00	0 1
2.06546000E+01 1.86580000E-02-4.85820000E-06	6.34609000E-10-3.37925000E-14	2
-2.55204000E+04-7.13117000E+01 2.78837000E+00	6.54017000E-02-4.58976000E-05	3
1.28194000E-08-6.40537000E-14-2.03864000E+04	2.18256000E+01	4
R36C4H8OOH H 9O 2C 4 OG	300.00 5000.00 1000.00	0 1
1.62442000E+01 1.75327000E-02-4.50884000E-06	5.80404000E-10-3.04106000E-14	2
-1.00415000E+04-5.11833000E+01 8.38706000E-01	6.54180000E-02-6.52570000E-05	3
3.87153000E-08-9.88741000E-12-5.89151000E+03	2.74756000E+01	4
R37C3H6OOOOH H 7O 4C 3 OG	300.00 5000.00 1000.00	0 1
1.89993000E+01 1.27598000E-02-3.02203000E-06	3.66603000E-10-1.84641000E-14	2
-2.42072000E+04-6.48045000E+01 2.22168000E+00	5.91333000E-02-4.76472000E-05	3
1.66500000E-08-1.28068000E-12-1.95597000E+04	2.19180000E+01	4
R38C4H8OOOOH H 9O 4C 4 OG	300.00 5000.00 1000.00	0 1
2.05415000E+01 1.80030000E-02-4.53742000E-06	5.78020000E-10-3.02113000E-14	2
-3.04920000E+04-7.19938000E+01 3.71506000E+00	4.83888000E-02 7.31255000E-06	3
4.64042000E-08 2.16193000E-11-2.53928000E+04	1.81770000E+01	4
ZC3H5Y H 5C 3 0 OG	200.00 6000.00 1000.00	0 1
7.00945680E+00 1.31066290E-02-4.65334420E-06	7.45143230E-10-4.43500510E-14	2
1.64129090E+04-1.39461140E+01 1.46980360E+00	1.90343650E-02 1.44804250E-05	3
-3.54686520E-08 1.66475940E-11 1.83258310E+04	1.67241140E+01	4
ZC4H7Y H 7C 4 0 OG	300.00 3000.00 1000.00	0 1
5.52142000E+00 2.68368400E-02-1.28643000E-05	3.08864000E-09-3.03085600E-13	2
1.19804400E+04-4.48244700E+00-1.08051400E+00	4.63868600E-02-3.46469700E-05	3
1.40137400E-08-2.39504000E-12 1.37553800E+04	2.93446600E+01	4
ZCOC2H5 H 5O 1C 3 OG	298.15 5000.00 1000.00	0 1
3.04456980E+00 2.32364290E-02-8.63179360E-06	1.47995500E-09-9.68608290E-14	2
-6.17872110E+03 1.31223020E+01 6.73682940E+00	-2.69452990E-03 4.99270170E-05	3
-5.00258080E-08 1.50115030E-11-6.57033660E+03	-2.33987320E+00	4
ZCOC2H3Z H 3O 1C 3 OG	200.00 6000.00 1000.00	0 1
6.95842227E+00 1.07193211E-02-3.85218494E-06	6.22009064E-10-3.72401640E-14	2
5.64826498E+03-1.14745786E+01 3.21169467E+00	1.18422105E-02 1.67462582E-05	3
-3.06947176E-08 1.33048816E-11 7.12815750E+03	1.00881663E+01	4
ZCOC3H7 H 7O 1C 4 OG	300.00 5000.00 1376.00	0 1
1.28160662E+01 1.70548297E-02-5.96070768E-06	9.38768070E-10-5.50072121E-14	2
-1.40496286E+04-3.93653682E+01 3.16978625E+00	3.58067169E-02-1.98565025E-05	3
5.86253798E-09-8.00911474E-13-1.01379253E+04	1.40926163E+01	4
ZCOOC2H5 H 5O 3C 3 OG	300.00 5000.00 1366.00	0 1
1.43508565E+01 1.33326325E-02-4.70764446E-06	7.46574589E-10-4.39597417E-14	2

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-2.02228125E+04-4.79605527E+01	5.42570896E+00	2.85326146E-02-1.23601498E-05	3
1.26523320E-09	2.77445665E-13-1.64676911E+04	2.13182530E+00	4
ZCOOOC3H7	H 70 3C 4 OG	300.00 5000.00 1372.00	0 1
1.74701426E+01	1.79306342E-02-6.30029467E-06	9.95892767E-10-5.85068030E-14	2
-2.43178776E+04-6.33071653E+01	5.21009493E+00	4.06134257E-02-2.04387769E-05	3
4.12293354E-09-1.49652276E-13-1.93559052E+04		4.83470269E+00	4
ZC3H5O#4	H 50 1C 3 OG	298.15 3000.00 1000.00	0 1
9.12069910E+00	1.21961170E-02-4.29297770E-06	1.26168920E-09-1.57053670E-13	2
9.17650120E+03-2.20714470E+01	7.05993930E-01	2.56297970E-02 7.10804110E-06	3
-2.96934950E-08	1.43607210E-11 1.19092680E+04	2.36100390E+01	4
ZC4H7O#4	H 70 1C 4 OG	300.00 5000.00 1372.00	0 1
1.25424386E+01	1.76550378E-02-6.07327417E-06	9.47427461E-10-5.51793491E-14	2
2.67149215E+03-4.32148273E+01-1.56765875E+00		4.61317045E-02-2.64268651E-05	3
6.83342740E-09-5.76723034E-13	8.04350103E+03	3.41983998E+01	4
ZOOC3H5O#4	H 50 3C 3 OG	300.00 5000.00 1369.00	0 1
1.54292894E+01	1.34713554E-02-4.80458893E-06	7.67113305E-10-4.53837038E-14	2
-1.37760602E+04-5.72932611E+01	1.08911058E+00	4.31068369E-02-2.69371387E-05	3
7.75608875E-09-8.09158566E-13-8.38912109E+03		2.11315823E+01	4
ZOOC4H7O#4	H 70 3C 4 OG	300.00 5000.00 1377.00	0 1
1.91911183E+01	1.76151885E-02-6.26183606E-06	9.97589643E-10-5.89289522E-14	2
-2.03303333E+04-7.73773753E+01-5.12340158E-01		6.24209409E-02-4.55456371E-05	3
1.69455052E-08-2.60292436E-12-1.33032867E+04		2.89853978E+01	4
ZC3H4O#4OOH	H 50 3C 3 OG	300.00 5000.00 1372.00	0 1
1.54851015E+01	1.29806531E-02-4.63101831E-06	7.39557652E-10-4.37600615E-14	2
-8.57748809E+03-5.45652299E+01	7.11475084E-01	4.49231777E-02-3.03649748E-05	3
9.95831187E-09-1.29093246E-12-3.17208804E+03		2.57238494E+01	4
ZC4H6O#4OOH	H 70 3C 4 OG	300.00 5000.00 1382.00	0 1
1.91404244E+01	1.70933500E-02-6.04902340E-06	9.60813343E-10-5.66391910E-14	2
-1.49588182E+04-7.37502467E+01-4.15308481E-02		6.19106383E-02-4.66383716E-05	3
1.80043748E-08-2.85824617E-12-8.25428331E+03		2.93431233E+01	4
ZOOC3H4O#4OOH	H 50 5C 3 OG	300.00 5000.00 1383.00	0 1
2.19261622E+01	1.22967381E-02-4.42322044E-06	7.10259257E-10-4.21876990E-14	2
-2.85261302E+04-8.64513194E+01	2.46130593E-01	6.67669100E-02-5.75657952E-05	3
2.45760582E-08-4.18014287E-12-2.14167573E+04		2.85701475E+01	4
ZOOC4H6O#4OOH	H 70 5C 4 OG	300.00 5000.00 1385.00	0 1
2.55480211E+01	1.64899060E-02-5.88076234E-06	9.38932764E-10-5.55497688E-14	2
-3.48596274E+04-1.05352898E+02	6.14971599E-01	7.98906438E-02-6.91110564E-05	3
3.01718606E-08-5.28756028E-12-2.66988483E+04		2.67589456E+01	4
N2	N 2 0 0 OG	300.00 5000.00 1000.00	0 1
2.92664000E+00	1.48797700E-03-5.68476030E-07	1.00970400E-10-6.75335090E-15	2
-9.22767600E+02	5.98052900E+00 3.29867700E+00	1.40823990E-03-3.96322180E-06	3
5.64151480E-09-2.44485400E-12-1.02090000E+03		3.95037200E+00	4
HE	HE 2 0 0 OG	300.00 5000.00 1000.00	0 1
3.12500000E+00-1.40625050E-03	9.37500490E-07-1.56250080E-10	0.00000000E+00	2
-9.40687000E+02-2.41241300E+00	2.50000000E+00	0.00000000E+00 0.00000000E+00	3
0.00000000E+00	0.00000000E+00-7.45375100E+02	9.15348900E-01	4
AR	AR 1 0 0 OG	300.00 5000.00 1000.00	0 1
2.50000000E+00	0.00000000E+00 0.00000000E+00	0.00000000E+00 0.00000000E+00	2
-7.45375000E+02	4.36600100E+00 2.50000000E+00	0.00000000E+00 0.00000000E+00	3
0.00000000E+00	0.00000000E+00-7.45375000E+02	4.36600100E+00	4

END

REACTIONS MOLECULES KELVINS

!

! 1

R11C2H5+O2 = R17C2H5O0

2.545E+27 -13.1000 4200.00

DUPLICATE

!

! 2

R11C2H5+O2 = R17C2H5O0

5.299E+38 -16.0000 8090.00

DUPLICATE

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!					
!	3				
R11C2H5+O2 =	R16C2H4OOH	8.110E+09	-8.3100	3880.00	
!					
!	4				
R11C2H5+O2 =	C2H4Z+R3OOH	1.181E-04	-2.6900	2340.00	
DUPLICATE					
!					
!	5				
R11C2H5+O2 =	C2H4Z+R3OOH	4.140E-01	-3.0700	10500.00	
DUPLICATE					
!					
!	6				
R11C2H5+O2 =	C2H4Z+R3OOH	1.614E-31	5.1900	4070.00	
DUPLICATE					
!					
!	7				
R11C2H5+O2 =	C2H4O#3+R2OH	1.140E-02	-3.8300	3850.00	
DUPLICATE					
!					
!	8				
R11C2H5+O2 =	C2H4O#3+R2OH	2.529E-14	0.1540	5060.00	
DUPLICATE					
!					
!	9				
R11C2H5+O2 =	CH3CHO+R2OH	1.130E-25	3.5700	1330.00	
!					
!	10				
R17C2H5OO =	C2H4Z+R3OOH	5.854E+27	-5.6300	16300.00	
DUPLICATE					
!					
!	11				
R17C2H5OO =	C2H4Z+R3OOH	3.112E+65	-17.0000	24200.00	
DUPLICATE					
!					
!	12				
R17C2H5OO =	C2H4O#3+R2OH	6.796E+46	-11.8000	22200.00	
!					
!	13				
R17C2H5OO =	CH3CHO+R2OH	5.344E+37	-9.5400	20300.00	
DUPLICATE					
!					
!	14				
R17C2H5OO =	CH3CHO+R2OH	-1.164E+72	-19.2000	33900.00	
DUPLICATE					
!					
!	15				
R16C2H4OOH =	C2H4Z+R3OOH	6.825E+40	-9.6100	12000.00	
!					
!	16				
R16C2H4OOH =	C2H4O#3+R2OH	1.224E+37	-8.3200	10800.00	
!					
!	17				
R16C2H4OOH =	CH3CHO+R2OH	5.520E+34	-9.8800	13200.00	
!					
!	18				
R16C2H4OOH =	R17C2H5OO	1.064E+41	-10.1000	13100.00	
!					
!	19				
R19C3H7+O2 =	R22C3H7OO	3.669E+27	-13.1000	4380.00	

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DUPLICATE				
!				
!	20			
R19C3H7+O2 =	R22C3H7OO	1.705E+53	-20.0000	12900.00
DUPLICATE				
!				
!	21			
R19C3H7+O2 =	R25C3H6OOH	3.628E-06	-3.2500	1990.00
!				
!	22			
R19C3H7+O2 =	R26C3H6OOH	5.284E-19	1.7800	84.50
!				
!	23			
R19C3H7+O2 =	C3H6Y+R3OOH	7.588E-04	-2.6300	4520.00
DUPLICATE				
!				
!	24			
R19C3H7+O2 =	C3H6Y+R3OOH	2.180E-33	5.6600	3050.00
DUPLICATE				
!				
!	25			
R19C3H7+O2 =	C3H6Y+R3OOH	1.337E-23	3.3200	6470.00
DUPLICATE				
!				
!	26			
R19C3H7+O2 =	C3H6O#3+R2OH	6.991E-13	-0.2980	2640.00
DUPLICATE				
!				
!	27			
R19C3H7+O2 =	C3H6O#3+R2OH	2.962E+23	-11.0000	10600.00
DUPLICATE				
!				
!	28			
R19C3H7+O2 =	C2H5CHO+R2OH	1.258E-30	5.0600	1220.00
DUPLICATE				
!				
!	29			
R19C3H7+O2 =	C2H5CHO+R2OH	8.401E-05	-2.5200	6830.00
DUPLICATE				
!				
!	30			
R19C3H7+O2 =	C3H6O#4+R2OH	1.637E-18	1.5200	3760.00
DUPLICATE				
!				
!	31			
R19C3H7+O2 =	C3H6O#4+R2OH	2.112E+09	-6.5100	9750.00
DUPLICATE				
!				
!	32			
R22C3H7OO =	C3H6Y+R3OOH	7.957E+24	-4.4100	16200.00
DUPLICATE				
!				
!	33			
R22C3H7OO =	C3H6Y+R3OOH	5.053E+67	-17.1000	26400.00
DUPLICATE				
!				
!	34			
R22C3H7OO =	C3H6O#3+R2OH	2.747E+28	-5.6400	17800.00
DUPLICATE				
!				

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!	35					
R22C3H7OO	=	C3H6O#3+R2OH	5.842E+62	-15.9000	25300.00	
DUPLICATE						
!	36					
R22C3H7OO	=	C2H5CHO+R2OH	3.893E+63	-20.1000	18100.00	
DUPLICATE						
!	37					
R22C3H7OO	=	C2H5CHO+R2OH	9.612E+45	-11.0000	23700.00	
DUPLICATE						
!	38					
R22C3H7OO	=	C3H6O#4+R2OH	8.768E+36	-8.1400	22200.00	
DUPLICATE						
!	39					
R22C3H7OO	=	C3H6O#4+R2OH	3.123+100	-27.2000	36600.00	
DUPLICATE						
!	40					
R25C3H6OOH	=	C3H6Y+R3OOH	1.810E+40	-9.4000	12600.00	
!	41					
R25C3H6OOH	=	C3H6O#3+R2OH	1.040E+33	-6.8200	9970.00	
!	42					
R25C3H6OOH	=	C2H5CHO+R2OH	6.370E+04	0.4050	12100.00	
!	43					
R25C3H6OOH	=	C3H6O#4+R2OH	2.324E+15	-2.5500	14800.00	
!	44					
R25C3H6OOH	=	R22C3H7OO	2.810E-03	2.5100	2700.00	
DUPLICATE						
!	45					
R25C3H6OOH	=	R22C3H7OO	4.108E+32	-7.8100	10300.00	
DUPLICATE						
!	46					
R26C3H6OOH	=	C3H6Y+R3OOH	1.003E-06	5.4400	7150.00	
!	47					
R26C3H6OOH	=	C3H6O#3+R2OH	1.556E+07	1.1500	10100.00	
!	48					
R26C3H6OOH	=	C2H5CHO+R2OH	1.686E-26	11.4000	6540.00	
!	49					
R26C3H6OOH	=	C3H6O#4+R2OH	1.795E+26	-5.1700	12800.00	
!	50					
R26C3H6OOH	=	R22C3H7OO	4.297E+01	2.5900	1470.00	
!	51					
R26C3H6OOH	=	R25C3H6OOH	7.658E+06	0.3120	7320.00	
!	52					
R21C3H7+O2	=	R24C3H7OO	5.633E+38	-16.7000	5510.00	

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DUPLICATE				
!				
!	53			
R21C3H7+O2 =	R24C3H7O0	7.999E+54	-20.8000	11300.00
DUPLICATE				
!				
!	54			
R21C3H7+O2 =	R30C3H6OOH	3.493E+13	-8.8000	4800.00
!				
!	55			
R21C3H7+O2 =	C3H6Y+R3OOH	3.442E-04	-2.6000	2680.00
DUPLICATE				
!				
!	56			
R21C3H7+O2 =	C3H6Y+R3OOH	3.169E+56	-18.3000	39000.00
DUPLICATE				
!				
!	57			
R21C3H7+O2 =	C3H6Y+R3OOH	2.651E-29	4.6300	2480.00
DUPLICATE				
!				
!	58			
R21C3H7+O2 =	C3H6Y+R3OOH	8.786E-23	3.2300	5330.00
DUPLICATE				
!				
!	59			
R21C3H7+O2 =	C3H6O#3+R2OH	3.376E-01	-3.6800	4630.00
DUPLICATE				
!				
!	60			
R21C3H7+O2 =	C3H6O#3+R2OH	1.588E+15	-7.2600	19600.00
DUPLICATE				
!				
!	61			
R21C3H7+O2 =	C2H6CO+R2OH	6.748E-19	1.5400	1920.00
!				
!	62			
R24C3H7O0 =	C3H6Y+R3OOH	1.873E+32	-6.5700	17800.00
DUPLICATE				
!				
!	63			
R24C3H7O0 =	C3H6Y+R3OOH	3.124E+81	-21.4000	28400.00
DUPLICATE				
!				
!	64			
R24C3H7O0 =	C3H6O#3+R2OH	6.742E+04	1.1200	15000.00
DUPLICATE				
!				
!	65			
R24C3H7O0 =	C3H6O#3+R2OH	4.585E+58	-14.6000	25600.00
DUPLICATE				
!				
!	66			
R24C3H7O0 =	C2H6CO+R2OH	4.481E+41	-10.1000	21400.00
!				
!	67			
R30C3H6OOH =	C3H6Y+R3OOH	4.574E+35	-7.6700	12000.00
!				
!	68			
R30C3H6OOH =	C3H6O#3+R2OH	8.014E+26	-4.9400	9220.00

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!				
!	69			
R30C3H6OOH =	C2H6CO+R2OH	1.144E+36	-9.3200	15100.00
!				
!	70			
R30C3H6OOH =	R24C3H7OO	1.291E+07	-0.2910	4040.00
DUPLICATE				
!				
!	71			
R30C3H6OOH =	R24C3H7OO	9.978E+52	-13.9000	14000.00
DUPLICATE				
!				
!	72			
C3H8 =	R4CH3+R11C2H5	5.000E+16	0.0000	43011.33
!				
!	73			
C3H8+O2 =	R3OOH+R21C3H7	3.321E-11	0.0000	24157.02
!				
!	74			
C3H8+O2 =	R3OOH+R19C3H7	4.151E-11	0.0000	24660.29
!				
!	75			
R20C4H9+O2 =	R23C4H9OO	3.653E-05	-2.5000	0.00
!				
!	76			
R25C3H6OOH+O2 =	R31C3H6OOOOH	3.653E-05	-2.5000	0.00
!				
!	77			
R26C3H6OOH+O2 =	R32C3H6OOOOH	3.653E-05	-2.5000	0.00
!				
!	78			
R27C4H8OOH+O2 =	R33C4H8OOOOH	3.653E-05	-2.5000	0.00
!				
!	79			
R28C4H8OOH+O2 =	R34C4H8OOOOH	3.653E-05	-2.5000	0.00
!				
!	80			
R29C4H8OOH+O2 =	R35C4H8OOOOH	3.653E-05	-2.5000	0.00
!				
!	81			
R30C3H6OOH+O2 =	R37C3H6OOOOH	3.653E-05	-2.5000	0.00
!				
!	82			
R36C4H8OOH+O2 =	R38C4H8OOOOH	3.653E-05	-2.5000	0.00
!				
!	83			
R23C4H9OO =	R27C4H8OOH	3.300E+09	1.0000	16356.32
!				
!	84			
R23C4H9OO =	R28C4H8OOH	5.700E+08	1.0000	12833.42
!				
!	85			
R23C4H9OO =	R29C4H8OOH	1.500E+08	1.0000	12581.78
!				
!	86			
R29C4H8OOH =	R36C4H8OOH	5.700E+08	1.0000	7700.05
!				
!	87			
R31C3H6OOOOH =	R2OH+C2H5COOOH	5.000E+09	1.0000	17866.13
DUPLICATE				

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!				
!	88			
R31C3H6O0000H =	R2OH+C2H5CO000H	3.300E+09	1.0000	15349.77
DUPLICATE				
!				
!	89			
R32C3H6O0000H =	R2OH+C2H5CO000H	3.300E+09	1.0000	16356.32
DUPLICATE				
!				
!	90			
R32C3H6O0000H =	R2OH+C2H5CO000H	5.700E+08	1.0000	11826.88
DUPLICATE				
!				
!	91			
R33C4H8O0000H =	R2OH+C3H7CO000H	3.300E+09	1.0000	15349.77
DUPLICATE				
!				
!	92			
R33C4H8O0000H =	R2OH+C3H7CO000H	3.300E+09	1.0000	16356.32
DUPLICATE				
!				
!	93			
R33C4H8O0000H =	R2OH+C3H7CO000H	8.600E+08	1.0000	14343.23
DUPLICATE				
!				
!	94			
R34C4H8O0000H =	R2OH+C3H7CO000H	5.000E+09	1.0000	17866.13
DUPLICATE				
!				
!	95			
R34C4H8O0000H =	R2OH+C3H7CO000H	3.300E+09	1.0000	16356.32
DUPLICATE				
!				
!	96			
R34C4H8O0000H =	R2OH+C3H7CO000H	5.700E+08	1.0000	11826.88
DUPLICATE				
!				
!	97			
R35C4H8O0000H =	R2OH+C3H7CO000H	5.700E+08	1.0000	16356.32
DUPLICATE				
!				
!	98			
R35C4H8O0000H =	R2OH+C3H7CO000H	5.700E+08	1.0000	12833.42
DUPLICATE				
!				
!	99			
R35C4H8O0000H =	R2OH+C3H7CO000H	9.900E+07	1.0000	10065.43
DUPLICATE				
!				
!	100			
R37C3H6O0000H =	R2OH+C2H5CO000H	1.700E+09	1.0000	13839.96
DUPLICATE				
!				
!	101			
R37C3H6O0000H =	R2OH+C2H5CO000H	8.600E+08	1.0000	14343.23
DUPLICATE				
!				
!	102			
R38C4H8O0000H =	R2OH+C3H7CO000H	3.300E+09	1.0000	16356.32
DUPLICATE				

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!				
!	103			
	R38C4H8OOOOH = R2OH+C3H7COOOH	5.700E+08	1.0000	12833.42
	DUPLICATE			
!				
!	104			
	R38C4H8OOOOH = R2OH+C3H7COOOH	1.500E+08	1.0000	12581.78
	DUPLICATE			
!				
!	105			
	R19C3H7 = R4CH3+C2H4Z	2.000E+13	0.0000	15601.41
!				
!	106			
	R20C4H9 = R11C2H5+C2H4Z	2.000E+13	0.0000	14443.89
!				
!	107			
	R27C4H8OOH = R3OOH+C4H8Y	8.500E+12	0.0000	13085.05
!				
!	108			
	R27C4H8OOH = R4CH3+C3H5OOHZ	2.000E+13	0.0000	15601.41
!				
!	109			
	R29C4H8OOH = R16C2H4OOH+C2H4Z	2.000E+13	0.0000	14443.89
!				
!	110			
	R36C4H8OOH = R2OH+C3H7CHO	1.000E+09	0.0000	3774.53
!				
!	111			
	R27C4H8OOH = R2OH+C4H8O#3	3.000E+11	0.0000	9864.12
!				
!	112			
	R28C4H8OOH = R2OH+C4H8O#4	2.500E+10	0.0000	7674.89
!				
!	113			
	B1O+C3H8 = R2OH+R21C3H7	4.317E-11	0.0000	2617.01
!				
!	114			
	B1O+C3H8 = R2OH+R19C3H7	1.660E-10	0.0000	3950.68
!				
!	115			
	C3H8+R1H = H2+R21C3H7	1.494E-17	2.0000	2516.36
!				
!	116			
	C3H8+R1H = H2+R19C3H7	9.464E-17	2.0000	3875.19
!				
!	117			
	C3H8+R2OH = H2O+R21C3H7	4.317E-18	2.0000	-385.00
!				
!	118			
	C3H8+R2OH = H2O+R19C3H7	8.966E-18	2.0000	226.47
!				
!	119			
	C3H8+R3OOH = H2O2+R21C3H7	6.641E-13	0.0000	7800.70
!				
!	120			
	C3H8+R3OOH = H2O2+R19C3H7	1.992E-12	0.0000	8555.61
!				
!	121			
	C3H8+R4CH3 = CH4+R21C3H7	3.321E-13	0.0000	4831.40
!				

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!	122			
C3H8+R4CH3 =	CH4+R19C3H7	9.962E-25	4.0000	4126.82
!				
!	123			
C3H8+R5CHO =	HCHO+R21C3H7	1.826E-17	1.9000	8555.61
!				
!	124			
C3H8+R5CHO =	HCHO+R19C3H7	3.321E-19	2.5000	9310.52
!				
!	125			
C3H8+R6CH2OH =	CH3OH+R21C3H7	9.962E-23	2.9500	6039.26
!				
!	126			
C3H8+R6CH2OH =	CH3OH+R19C3H7	3.321E-22	2.9500	7045.80
!				
!	127			
C3H8+R7CH3O =	CH3OH+R21C3H7	2.490E-13	0.0000	2264.72
!				
!	128			
C3H8+R7CH3O =	CH3OH+R19C3H7	5.313E-13	0.0000	3673.88
!				
!	129			
C3H8+R8CH3OO =	CH3OOH+R21C3H7	4.981E-12	0.0000	8807.25
!				
!	130			
C3H8+R8CH3OO =	CH3OOH+R19C3H7	1.992E-11	0.0000	10065.43
!				
!	131			
C3H8+R11C2H5 =	C2H6+R21C3H7	3.321E-13	0.0000	5535.98
!				
!	132			
C3H8+R11C2H5 =	C2H6+R19C3H7	9.962E-13	0.0000	6794.16
!				
!	133			
C3H8+R21C3H7 =	C3H8+R19C3H7	1.395E-26	4.2000	4378.46
!				
!	134			
C3H8+R22C3H7OO =	C3H7OOH+R21C3H7	4.981E-12	0.0000	8807.25
!				
!	135			
C3H8+R22C3H7OO =	C3H7OOH+R19C3H7	1.992E-11	0.0000	10065.43
!				
!	136			
C3H8+R24C3H7OO =	C3H7OOH+R21C3H7	4.981E-12	0.0000	8807.25
!				
!	137			
C3H8+R24C3H7OO =	C3H7OOH+R19C3H7	1.992E-11	0.0000	10065.43
!				
!	138			
R1H+R21C3H7 =	C3H8	1.046E-11	0.0000	0.00
!				
!	139			
R2OH+R21C3H7 =	C3H7OH	8.135E-12	0.0000	0.00
!				
!	140			
R3OOH+R21C3H7 =	C3H7OOH	6.641E-12	0.0000	0.00
!				
!	141			
R4CH3+R21C3H7 =	C4H10	1.992E-11	0.0000	0.00
!				

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!	142			
	R5CHO+R21C3H7 =	C3H7CHO	7.139E-12	0.0000
				0.00
!	143			
	R6CH2OH+R21C3H7 =	C4H9OH	6.973E-12	0.0000
				0.00
!	144			
	R7CH3O+R21C3H7 =	C4H10O	6.641E-12	0.0000
				0.00
!	145			
	R8CH3OO+R21C3H7 =	C4H10OO	5.977E-12	0.0000
				0.00
!	146			
	R11C2H5+R21C3H7 =	C5H12	7.139E-12	0.0000
				0.00
!	147			
	2R21C3H7 =	C6H14	3.155E-12	0.0000
				0.00
!	148			
	R22C3H7OO+R3OOH =	C3H7OOH+O2	3.321E-13	0.0000
				-654.25
!	149			
	R23C4H9OO+R3OOH =	C4H9OOH+O2	3.321E-13	0.0000
				-654.25
!	150			
	R24C3H7OO+R3OOH =	C3H7OOH+O2	3.321E-13	0.0000
				-654.25
!	151			
	C3H7OOH =	R2OH+HCHO+R11C2H5	1.500E+16	0.0000
				21137.39
!	152			
	C3H5OOHZ =	R2OH+HCHO+R10C2H3V	1.500E+16	0.0000
				21137.39
!	153			
	C4H9OOH =	R2OH+CH3CHO+R11C2H5	1.500E+16	0.0000
				21137.39
!	154			
	C3H5OOHY =	R2OH+HCHO+R10C2H3V	1.500E+16	0.0000
				21137.39
!	155			
	C4H7OOHY =	R2OH+CH3CHO+R10C2H3V	1.500E+16	0.0000
				21137.39
!	156			
	C2H5COOOH =	R2OH+HCHO+B2CO+R4CH3	1.500E+16	0.0000
				21137.39
!	157			
	C3H7COOOH =	R2OH+HCHO+B2CO+R11C2H5	1.500E+16	0.0000
				21137.39
!	158			
	C4H10+R1H =	H2+R11C2H5+C2H4Z	4.483E-17	2.0000
				2516.36
!	159			
	C4H10+R2OH =	H2O+R11C2H5+C2H4Z	1.295E-17	2.0000
				-385.00
!	160			
	C4H10+R3OOH =	H2O2+R11C2H5+C2H4Z	1.992E-12	0.0000
				7800.70
!	161			
	C4H10+R4CH3 =	CH4+R11C2H5+C2H4Z	9.962E-13	0.0000
				4831.40
!				

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!	162				
C4H10+R8CH3OO	=	CH3OOH+R11C2H5+C2H4Z	7.471E-12	0.0000	8807.25
!					
!	163				
C4H10+R11C2H5	=	C2H6+R11C2H5+C2H4Z	9.962E-13	0.0000	5535.98
!					
!	164				
C5H12+R1H	=	H2+R4CH3+2C2H4Z	4.483E-17	2.0000	2516.36
!					
!	165				
C5H12+R2OH	=	H2O+R4CH3+2C2H4Z	1.295E-17	2.0000	-385.00
!					
!	166				
C5H12+R3OOH	=	H2O2+R4CH3+2C2H4Z	1.992E-12	0.0000	7800.70
!					
!	167				
C5H12+R4CH3	=	CH4+R4CH3+2C2H4Z	9.962E-13	0.0000	4831.40
!					
!	168				
C5H12+R8CH3OO	=	CH3OOH+R4CH3+2C2H4Z	7.471E-12	0.0000	8807.25
!					
!	169				
C5H12+R11C2H5	=	C2H6+R4CH3+2C2H4Z	9.962E-13	0.0000	5535.98
!					
!	170				
C6H14+R1H	=	H2+R11C2H5+2C2H4Z	4.483E-17	2.0000	2516.36
!					
!	171				
C6H14+R2OH	=	H2O+R11C2H5+2C2H4Z	1.295E-17	2.0000	-385.00
!					
!	172				
C6H14+R3OOH	=	H2O2+R11C2H5+2C2H4Z	1.992E-12	0.0000	7800.70
!					
!	173				
C6H14+R4CH3	=	CH4+R11C2H5+2C2H4Z	9.962E-13	0.0000	4831.40
!					
!	174				
C6H14+R8CH3OO	=	CH3OOH+R11C2H5+2C2H4Z	7.471E-12	0.0000	8807.25
!					
!	175				
C6H14+R11C2H5	=	C2H6+R11C2H5+2C2H4Z	9.962E-13	0.0000	5535.98
!					
!	176				
C3H6O#3+R1H	=	H2+CH2CO+R4CH3	4.483E-17	2.0000	2516.36
!					
!	177				
C3H6O#3+R2OH	=	H2O+CH2CO+R4CH3	1.295E-17	2.0000	-385.00
!					
!	178				
C3H6O#3+R3OOH	=	H2O2+CH2CO+R4CH3	1.992E-12	0.0000	7800.70
!					
!	179				
C3H6O#3+R4CH3	=	CH4+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!					
!	180				
C3H6O#3+R8CH3OO	=	CH3OOH+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!					
!	181				
C3H6O#3+R11C2H5	=	C2H6+CH2CO+R4CH3	9.962E-13	0.0000	5535.98
!					

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!	182			
C4H8O#3+R1H =	H2+CH2CO+R11C2H5	4.483E-17	2.0000	2516.36
!				
!	183			
C4H8O#3+R2OH =	H2O+CH2CO+R11C2H5	1.295E-17	2.0000	-385.00
!				
!	184			
C4H8O#3+R3OOH =	H2O2+CH2CO+R11C2H5	1.992E-12	0.0000	7800.70
!				
!	185			
C4H8O#3+R4CH3 =	CH4+CH2CO+R11C2H5	9.962E-13	0.0000	4831.40
!				
!	186			
C4H8O#3+R8CH3OO =	CH3OOH+CH2CO+R11C2H5	9.962E-13	0.0000	4831.40
!				
!	187			
C4H8O#3+R11C2H5 =	C2H6+CH2CO+R11C2H5	9.962E-13	0.0000	5535.98
!				
!	188			
C3H6O#3+B1O =	R2OH+R5CHO+C2H4Z	1.295E-10	0.0000	2617.01
!				
!	189			
C4H8O#3+B1O =	R2OH+R13CH2CHO+C2H4Z	1.295E-10	0.0000	2617.01
!				
!	190			
C3H6O#4+R1H =	H2+CH2CO+R4CH3	4.483E-17	2.0000	2516.36
!				
!	191			
C3H6O#4+R2OH =	H2O+CH2CO+R4CH3	1.295E-17	2.0000	-385.00
!				
!	192			
C3H6O#4+R3OOH =	H2O2+CH2CO+R4CH3	1.992E-12	0.0000	7800.70
!				
!	193			
C3H6O#4+R4CH3 =	CH4+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!				
!	194			
C3H6O#4+R8CH3OO =	CH3OOH+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!				
!	195			
C3H6O#4+R11C2H5 =	C2H6+CH2CO+R4CH3	9.962E-13	0.0000	5535.98
!				
!	196			
C4H8O#4+R1H =	H2+CH2CO+R11C2H5	4.483E-17	2.0000	2516.36
!				
!	197			
C4H8O#4+R2OH =	H2O+CH2CO+R11C2H5	1.295E-17	2.0000	-385.00
!				
!	198			
C4H8O#4+R3OOH =	H2O2+CH2CO+R11C2H5	1.992E-12	0.0000	7800.70
!				
!	199			
C4H8O#4+R4CH3 =	CH4+CH2CO+R11C2H5	9.962E-13	0.0000	4831.40
!				
!	200			
C4H8O#4+R8CH3OO =	CH3OOH+CH2CO+R11C2H5	9.962E-13	0.0000	4831.40
!				
!	201			
C4H8O#4+R11C2H5 =	C2H6+CH2CO+R11C2H5	9.962E-13	0.0000	5535.98
!				

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!	202			
	$C3H6O\#4+R1H = H2+ZC3H5O\#4$	4.483E-17	2.0000	2516.36
!				
!	203			
	$C3H6O\#4+R2OH = H2O+ZC3H5O\#4$	1.295E-17	2.0000	-385.00
!				
!	204			
	$C3H6O\#4+R3OOH = H2O2+ZC3H5O\#4$	1.992E-12	0.0000	7800.70
!				
!	205			
	$C3H6O\#4+R4CH3 = CH4+ZC3H5O\#4$	9.962E-13	0.0000	4831.40
!				
!	206			
	$C3H6O\#4+R8CH3OO = CH3OOH+ZC3H5O\#4$	9.962E-13	0.0000	4831.40
!				
!	207			
	$C3H6O\#4+R11C2H5 = C2H6+ZC3H5O\#4$	9.962E-13	0.0000	5535.98
!				
!	208			
	$C4H8O\#4+R1H = H2+ZC4H7O\#4$	4.483E-17	2.0000	2516.36
!				
!	209			
	$C4H8O\#4+R2OH = H2O+ZC4H7O\#4$	1.295E-17	2.0000	-385.00
!				
!	210			
	$C4H8O\#4+R3OOH = H2O2+ZC4H7O\#4$	1.992E-12	0.0000	7800.70
!				
!	211			
	$C4H8O\#4+R4CH3 = CH4+ZC4H7O\#4$	9.962E-13	0.0000	4831.40
!				
!	212			
	$C4H8O\#4+R8CH3OO = CH3OOH+ZC4H7O\#4$	9.962E-13	0.0000	4831.40
!				
!	213			
	$C4H8O\#4+R11C2H5 = C2H6+ZC4H7O\#4$	9.962E-13	0.0000	5535.98
!				
!	214			
	$ZC3H5O\#4 = R5CHO+C2H4Z$	5.000E+13	0.0000	12481.13
!				
!	215			
	$ZC4H7O\#4 = R13CH2CHO+C2H4Z$	5.000E+13	0.0000	12481.13
!				
!	216			
	$ZC3H5O\#4+O2 = ZOOC3H5O\#4$	3.653E-05	-2.5000	0.00
!				
!	217			
	$ZC4H7O\#4+O2 = ZOOC4H7O\#4$	3.653E-05	-2.5000	0.00
!				
!	218			
	$ZOOC3H5O\#4 = ZC3H4O\#4OOH$	8.000E+13	0.0000	12833.42
!				
!	219			
	$ZOOC4H7O\#4 = ZC4H6O\#4OOH$	8.000E+13	0.0000	12833.42
!				
!	220			
	$ZC3H4O\#4OOH+O2 = ZOOC3H4O\#4OOH$	3.653E-05	-2.5000	0.00
!				
!	221			
	$ZC4H6O\#4OOH+O2 = ZOOC4H6O\#4OOH$	3.653E-05	-2.5000	0.00
!				

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!	222			
	ZOOC3H4O#4OOH = R2OH+C2H3O#4COOOH	1.000E+09	0.0000	3774.53
!				
!	223			
	ZOOC4H6O#4OOH = R2OH+C3H5O#4COOOH	1.000E+09	0.0000	3774.53
!				
!	224			
	C2H3O#4COOOH = R2OH+CO2+R13CH2CHO	1.500E+16	0.0000	21137.39
!				
!	225			
	C3H5O#4COOOH = R2OH+CO2+R5CHO+C2H4Z	1.500E+16	0.0000	21137.39
!				
!	226			
	C3H6Y+R1H = C2H4Z+R4CH3	1.195E-11	0.0000	1459.49
!				
!	227			
	C4H8Y+R1H = C2H4Z+R11C2H5	1.195E-11	0.0000	1459.49
!				
!	228			
	C3H6Y+R2OH = R4CH3+CH3CHO	2.324E-12	0.0000	-452.94
!				
!	229			
	C4H8Y+R2OH = R4CH3+C2H5CHO	2.324E-12	0.0000	-452.94
!				
!	230			
	C3H6Y+R2OH = HCHO+R11C2H5	2.324E-12	0.0000	-452.94
!				
!	231			
	C4H8Y+R2OH = HCHO+R4CH3+C2H4Z	2.324E-12	0.0000	-452.94
!				
!	232			
	C3H6Y+B1O = CH2CO+R4CH3+R1H	5.645E-17	1.8300	276.80
!				
!	233			
	C4H8Y+B1O = CH2CO+R11C2H5+R1H	5.645E-17	1.8300	276.80
!				
!	234			
	C3H6Y+R3OOH = R2OH+C3H6O#3	1.660E-12	0.0000	7247.11
!				
!	235			
	C4H8Y+R3OOH = R2OH+C4H8O#3	1.660E-12	0.0000	7247.11
!				
!	236			
	C3H6Y+R1H = ZC3H5Y+H2	9.464E-20	2.5000	145.95
!				
!	237			
	C3H6Y+R2OH = ZC3H5Y+H2O	4.981E-18	2.0000	-762.46
!				
!	238			
	C3H6Y+R3OOH = ZC3H5Y+H2O2	1.046E-20	2.6000	6240.56
!				
!	239			
	C3H6Y+R4CH3 = ZC3H5Y+CH4	2.158E-24	3.5000	1799.19
!				
!	240			
	C3H6Y+R8CH3OO = ZC3H5Y+CH3OOH	3.321E-12	0.0000	8580.78
!				
!	241			
	C3H6Y+R11C2H5 = ZC3H5Y+C2H6	2.324E-24	3.5000	2181.68
!				

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!	242			
	$C4H8Y+R1H = ZC4H7Y+H2$	9.464E-20	2.5000	145.95
!				
!	243			
	$C4H8Y+R2OH = ZC4H7Y+H2O$	4.981E-18	2.0000	-762.46
!				
!	244			
	$C4H8Y+R3OOH = ZC4H7Y+H2O2$	1.046E-20	2.6000	6240.56
!				
!	245			
	$C4H8Y+R4CH3 = ZC4H7Y+CH4$	2.158E-24	3.5000	1799.19
!				
!	246			
	$C4H8Y+R8CH3OO = ZC4H7Y+CH3OOH$	3.321E-12	0.0000	8580.78
!				
!	247			
	$C4H8Y+R11C2H5 = ZC4H7Y+C2H6$	2.324E-24	3.5000	2181.68
!				
!	248			
	$C3H6Y+B1O = ZC3H5Y+R2OH$	1.511E-13	0.7000	1927.53
!				
!	249			
	$C4H8Y+B1O = ZC4H7Y+R2OH$	1.511E-13	0.7000	1927.53
!				
!	250			
	$ZC3H5Y+C4H8Y = R4CH3+C2H2T+2C2H4Z$	9.962E-15	0.0000	5737.29
!				
!	251			
	$ZC3H5Y+C3H6Y = R10C2H3V+2C2H4Z$	9.962E-15	0.0000	5737.29
!				
!	252			
	$ZC4H7Y+C4H8Y = R10C2H3V+3C2H4Z$	9.962E-15	0.0000	5737.29
!				
!	253			
	$ZC4H7Y+C3H6Y = R4CH3+C2H2T+2C2H4Z$	9.962E-15	0.0000	5737.29
!				
!	254			
	$C3H7OH+R1H = H2+R2OH+C3H6Y$	1.494E-17	2.0000	2516.36
!				
!	255			
	$C3H7OH+R2OH = H2O+R2OH+C3H6Y$	2.158E-18	2.0000	-385.00
!				
!	256			
	$C3H7OH+R3OOH = H2O2+R2OH+C3H6Y$	6.641E-13	0.0000	7800.70
!				
!	257			
	$C3H7OH+R4CH3 = CH4+R2OH+C3H6Y$	3.321E-13	0.0000	4831.40
!				
!	258			
	$C3H7OH+R8CH3OO = CH3OOH+R2OH+C3H6Y$	4.981E-12	0.0000	8807.25
!				
!	259			
	$C3H7OH+R11C2H5 = C2H6+R2OH+C3H6Y$	3.321E-13	0.0000	5535.98
!				
!	260			
	$C4H9OH+R1H = H2+R2OH+C4H8Y$	1.494E-17	2.0000	2516.36
!				
!	261			
	$C4H9OH+R1H = H2+R4CH3+C2H6CO$	6.973E-18	2.0000	1207.85
!				

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!	262			
	$C_4H_9OH + R_2OH = H_2O + R_2OH + C_4H_8Y$	2.158E-18	2.0000	-385.00
!				
!	263			
	$C_4H_9OH + R_2OH = H_2O + R_4CH_3 + C_2H_6CO$	6.641E-12	0.0000	222.95
!				
!	264			
	$C_4H_9OH + R_3OOH = H_2O_2 + R_2OH + C_4H_8Y$	6.641E-13	0.0000	7800.70
!				
!	265			
	$C_4H_9OH + R_3OOH = H_2O_2 + R_4CH_3 + C_2H_6CO$	1.660E-12	0.0000	7045.80
!				
!	266			
	$C_4H_9OH + R_4CH_3 = CH_4 + R_2OH + C_4H_8Y$	3.321E-13	0.0000	4831.40
!				
!	267			
	$C_4H_9OH + R_4CH_3 = CH_4 + R_4CH_3 + C_2H_6CO$	1.660E-13	0.0000	3824.86
!				
!	268			
	$C_4H_9OH + R_8CH_3OO = CH_3OOH + R_2OH + C_4H_8Y$	4.981E-12	0.0000	8807.25
!				
!	269			
	$C_4H_9OH + R_{11}C_2H_5 = C_2H_6 + R_2OH + C_4H_8Y$	3.321E-13	0.0000	5535.98
!				
!	270			
	$C_4H_9OH + R_{11}C_2H_5 = C_2H_6 + R_4CH_3 + C_2H_6CO$	1.660E-13	0.0000	4630.10
!				
!	271			
	$C_3H_7OH + B_{10} = 2R_2OH + C_3H_6Y$	1.494E-17	2.0000	2516.36
!				
!	272			
	$C_4H_9OH + B_{10} = 2R_2OH + C_4H_8Y$	1.494E-17	2.0000	2516.36
!				
!	273			
	$C_4H_9OH + B_{10} = R_2OH + R_4CH_3 + C_2H_6CO$	6.973E-18	2.0000	1207.85
!				
!	274			
	$C_2H_5CHO + R_{11}H = H_2 + ZCOC_2H_5$	6.641E-11	0.0000	2113.74
!				
!	275			
	$C_2H_5CHO + R_2OH = H_2O + ZCOC_2H_5$	6.973E-12	0.0000	251.64
!				
!	276			
	$C_2H_5CHO + R_3OOH = H_2O_2 + ZCOC_2H_5$	1.660E-12	0.0000	5032.71
!				
!	277			
	$C_2H_5CHO + R_4CH_3 = CH_4 + ZCOC_2H_5$	3.321E-30	5.6000	1258.18
!				
!	278			
	$C_2H_5CHO + R_{11}C_2H_5 = C_2H_6 + ZCOC_2H_5$	2.158E-12	0.0000	4277.81
!				
!	279			
	$C_2H_3CHOZ + R_{11}H = H_2 + ZCOC_2H_3Z$	6.641E-11	0.0000	2113.74
!				
!	280			
	$C_2H_3CHOZ + R_2OH = H_2O + ZCOC_2H_3Z$	6.973E-12	0.0000	251.64
!				
!	281			
	$C_2H_3CHOZ + R_3OOH = H_2O_2 + ZCOC_2H_3Z$	1.660E-12	0.0000	5032.71
!				

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! 282			
C2H3CHOZ+R4CH3 = CH4+ZCOC2H3Z	3.321E-30	5.6000	1258.18
!			
! 283			
C2H3CHOZ+R11C2H5 = C2H6+ZCOC2H3Z	2.158E-12	0.0000	4277.81
!			
! 284			
C3H7CHO+R1H = H2+ZCOC3H7	6.641E-11	0.0000	2113.74
!			
! 285			
C3H7CHO+R2OH = H2O+ZCOC3H7	6.973E-12	0.0000	251.64
!			
! 286			
C3H7CHO+R3OOH = H2O2+ZCOC3H7	1.660E-12	0.0000	5032.71
!			
! 287			
C3H7CHO+R4CH3 = CH4+ZCOC3H7	3.321E-30	5.6000	1258.18
!			
! 288			
C3H7CHO+R11C2H5 = C2H6+ZCOC3H7	2.158E-12	0.0000	4277.81
!			
! 289			
ZCOC2H5 = B2CO+R11C2H5	2.000E+13	0.0000	14443.89
!			
! 290			
ZCOC3H7 = B2CO+R4CH3+C2H4Z	2.000E+13	0.0000	14443.89
!			
! 291			
ZCOC2H5+O2 = ZCOOOC2H5	3.653E-05	-2.5000	0.00
!			
! 292			
ZCOC3H7+O2 = ZCOOOC3H7	3.653E-05	-2.5000	0.00
!			
! 293			
ZCOOOC2H5 = C2H4Z+R2OH+CO2	4.500E+11	0.0000	12581.78
!			
! 294			
ZCOOOC3H7 = C3H6Y+R2OH+CO2	4.500E+11	0.0000	12581.78
!			
! 295			
C2H6CO+R1H = H2+CH2CO+R4CH3	4.483E-17	2.0000	2516.36
!			
! 296			
C2H6CO+R2OH = H2O+CH2CO+R4CH3	1.295E-17	2.0000	-385.00
!			
! 297			
C2H6CO+R3OOH = H2O2+CH2CO+R4CH3	1.992E-12	0.0000	7800.70
!			
! 298			
C2H6CO+R4CH3 = CH4+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!			
! 299			
C2H6CO+R8CH3OO = CH3OOH+CH2CO+R4CH3	9.962E-13	0.0000	4831.40
!			
! 300			
C2H6CO+R11C2H5 = C2H6+CH2CO+R4CH3	9.962E-13	0.0000	5535.98
!			
! 301			
C3H8CO+R1H = H2+CH2CO+R11C2H5	4.483E-17	2.0000	2516.36
!			

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!	302			
	$C_3H_8CO + R_2OH = H_2O + CH_2CO + R_{11}C_2H_5$	1.295E-17	2.0000	-385.00
!				
!	303			
	$C_3H_8CO + R_3OOH = H_2O_2 + CH_2CO + R_{11}C_2H_5$	1.992E-12	0.0000	7800.70
!				
!	304			
	$C_3H_8CO + R_4CH_3 = CH_4 + CH_2CO + R_{11}C_2H_5$	9.962E-13	0.0000	4831.40
!				
!	305			
	$C_3H_8CO + R_8CH_3OO = CH_3OOH + CH_2CO + R_{11}C_2H_5$	9.962E-13	0.0000	4831.40
!				
!	306			
	$C_3H_8CO + R_{11}C_2H_5 = C_2H_6 + CH_2CO + R_{11}C_2H_5$	9.962E-13	0.0000	5535.98
!				
!	307			
	$C_4H_6Z_2 + C_2H_4Z = C_6H_{10}Z\#6$	4.981E-14	0.0000	13839.96
!				
!	308			
	$ZC_3H_5Y + R_1H = C_3H_6Y$	1.660E-11	0.0000	0.00
!				
!	309			
	$ZC_3H_5Y + R_2OH = C_3H_5OHY$	1.660E-11	0.0000	0.00
!				
!	310			
	$ZC_3H_5Y + R_3OOH = C_3H_5OOHY$	8.302E-12	0.0000	0.00
!				
!	311			
	$ZC_3H_5Y + R_4CH_3 = C_4H_8Y$	1.660E-11	0.0000	0.00
!				
!	312			
	$ZC_3H_5Y + R_5CHO = C_3H_5CHOY$	1.660E-11	0.0000	0.00
!				
!	313			
	$ZC_3H_5Y + R_6CH_2OH = C_4H_7OHY$	1.660E-11	0.0000	0.00
!				
!	314			
	$ZC_3H_5Y + R_8CH_3OO = C_4H_8OOY$	1.660E-11	0.0000	0.00
!				
!	315			
	$ZC_3H_5Y + R_{11}C_2H_5 = C_5H_{10}Y$	1.660E-11	0.0000	0.00
!				
!	316			
	$ZC_4H_7Y + R_1H = C_4H_8Y$	1.660E-11	0.0000	0.00
!				
!	317			
	$ZC_4H_7Y + R_2OH = C_4H_7OHY$	1.660E-11	0.0000	0.00
!				
!	318			
	$ZC_4H_7Y + R_3OOH = C_4H_7OOHY$	8.302E-12	0.0000	0.00
!				
!	319			
	$ZC_4H_7Y + R_4CH_3 = C_5H_{10}Y$	1.660E-11	0.0000	0.00
!				
!	320			
	$ZC_4H_7Y + R_5CHO = C_4H_7CHOY$	1.660E-11	0.0000	0.00
!				
!	321			
	$ZC_4H_7Y + R_6CH_2OH = C_5H_9OHY$	1.660E-11	0.0000	0.00
!				

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!	322			
ZC4H7Y+R8CH3OO =	C5H10OY	1.660E-11	0.0000	0.00
!				
!	323			
ZC4H7Y+R11C2H5 =	C6H12Y	1.660E-11	0.0000	0.00
!				
!	324			
2ZC3H5Y =	C6H10Y2	1.660E-11	0.0000	0.00
!				
!	325			
ZC3H5Y+ZC4H7Y =	C7H12Y2	1.660E-11	0.0000	0.00
!				
!	326			
2ZC4H7Y =	C8H14Y2	1.660E-11	0.0000	0.00
!				
!	327			
2R1H+M =	H2+M	5.155E-30	-1.0000	0.00
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ H2/0/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/				
!				
!	328			
B4CH+R1H =	B3C+H2	1.295E-10	0.0000	0.00
!				
!	329			
B6CH2+M =	B5CH2+M	2.507E-11	0.0000	0.00
N2/0.4/ O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/0.46/ HE/0.34/ C2H4Z/1.6/ AR/0.23/				
!				
!	330			
B6CH2+R1H =	B4CH+H2	4.981E-11	0.0000	0.00
!				
!	331			
B5CH2+R1H =	B4CH+H2	9.962E-12	0.0000	-905.89
!				
!	332			
B5CH2+B3C =	R9C2HT+R1H	8.302E-11	0.0000	0.00
!				
!	333			
2B5CH2 =	C2H2T+2R1H	1.992E-10	0.0000	402.62
!				
!	334			
R4CH3+M =	B5CH2+R1H+M	4.831E-08	0.0000	45646.71
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/				
!				
!	335			
R4CH3+R1H =	B6CH2+H2	9.962E-11	0.0000	7549.07
!				
!	336			
R4CH3+B4CH =	R10C2H3V+R1H	4.981E-11	0.0000	0.00
!				
!	337			
R4CH3+B6CH2 =	C2H4Z+R1H	2.989E-11	0.0000	0.00
!				
!	338			
R4CH3+B5CH2 =	C2H4Z+R1H	6.973E-11	0.0000	0.00
!				
!	339			
R4CH3+B3C =	C2H2T+R1H	8.302E-11	0.0000	0.00
!				
!	340			

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2R4CH3(+M) = C2H6(+M)	5.994E-11	0.0000	0.00
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
LOW / 1.001E-06 -7.00 1389.03 /			
TROE / 6.2000E-01 7.3000E+01 1.1800E+03 /			
!			
!	341		
2R4CH3 = R11C2H5+R1H	4.981E-11	0.0000	6794.16
!			
!	342		
2R4CH3 = C2H4Z+H2	3.487E-10	0.0000	9713.14
!			
!	343		
R1H+R4CH3(+M) = CH4(+M)	2.773E-10	0.0000	0.00
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
LOW / 3.881E-24 -1.80 0.00 /			
TROE / 3.7000E-01 3.3150E+03 6.1000E+01 /			
!			
!	344		
CH4(+CH4) = R4CH3+R1H(+CH4)	2.400E+16	0.0000	52843.48
LOW / 1.400E-06 0.00 45747.36 /			
TROE / 6.9000E-01 9.0000E+01 2.2100E+03 /			
!			
!	345		
CH4+R1H = R4CH3+H2	2.158E-20	3.0000	4026.17
!			
!	346		
CH4+B4CH = C2H4Z+R1H	4.981E-11	0.0000	-201.31
!			
!	347		
CH4+B6CH2 = 2R4CH3	6.973E-11	0.0000	0.00
!			
!	348		
R9C2HT+B6CH2 = C2H2T+B4CH	2.989E-11	0.0000	0.00
!			
!	349		
R9C2HT+B5CH2 = C2H2T+B4CH	2.989E-11	0.0000	0.00
!			
!	350		
R9C2HT+CH4 = C2H2T+R4CH3	1.992E-12	0.0000	0.00
!			
!	351		
C2H2T+M = R9C2HT+R1H+M	1.893E-07	0.0000	53850.03
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!			
!	352		
C2H2T+R1H = R9C2HT+H2	1.096E-10	0.0000	13940.61
!			
!	353		
R10C2H3V(+M) = C2H2T+R1H(+M)	2.000E+14	0.0000	20030.20
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ AR/0.34/ N2/0.4/ HE/0.34/			
LOW / 1.976E+18 -7.50 22924.01 /			
TROE / 3.5000E-01 1.0000E+00 1.0000E+08 /			
!			
!	354		
R10C2H3V+R1H = C2H2T+H2	1.992E-11	0.0000	0.00
!			
!	355		
R10C2H3V+B6CH2 = C2H2T+R4CH3	2.989E-11	0.0000	0.00
!			
!	356		

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R10C2H3V+B5CH2 = C2H2T+R4CH3	2.989E-11	0.0000	0.00
!			
! 357			
R10C2H3V+R4CH3 = CH4+C2H2T	6.475E-13	0.0000	0.00
!			
! 358			
R10C2H3V+R9C2HT = 2C2H2T	1.594E-12	0.0000	0.00
!			
! 359			
2R10C2H3V = C2H4Z+C2H2T	1.594E-12	0.0000	0.00
!			
! 360			
C2H4Z+M = C2H2T+H2+M	1.655E-07	0.0000	36034.22
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!			
! 361			
C2H4Z+M = R10C2H3V+R1H+M	1.229E-06	0.0000	48666.33
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!			
! 362			
C2H4Z+R1H = R10C2H3V+H2	8.302E-17	1.9300	6542.53
!			
! 363			
C2H4Z+R4CH3 = CH4+R10C2H3V	1.046E-12	0.0000	8052.34
!			
! 364			
R11C2H5(+M) = C2H4Z+R1H(+M)	8.200E+13	0.0000	20130.85
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
LOW / 5.645E-07 0.00 16809.26 /			
TROE / 7.5000E-01 9.7000E+01 1.3790E+03 /			
!			
! 365			
R11C2H5+R1H = C2H4Z+H2	2.989E-12	0.0000	0.00
!			
! 366			
R11C2H5+R1H = C2H6	5.977E-11	0.0000	0.00
!			
! 367			
R11C2H5+B6CH2 = C2H4Z+R4CH3	1.494E-11	0.0000	0.00
!			
! 368			
R11C2H5+B5CH2 = C2H4Z+R4CH3	2.989E-11	0.0000	0.00
!			
! 369			
R11C2H5+R4CH3 = C2H4Z+CH4	1.826E-12	0.0000	0.00
!			
! 370			
R11C2H5+R9C2HT = C2H2T+C2H4Z	2.989E-12	0.0000	0.00
!			
! 371			
R11C2H5+R10C2H3V = 2C2H4Z	7.969E-13	0.0000	0.00
!			
! 372			
R11C2H5+R10C2H3V = C2H2T+C2H6	7.969E-13	0.0000	0.00
!			
! 373			
2R11C2H5 = C2H4Z+C2H6	2.324E-12	0.0000	0.00
!			
! 374			
C2H6+M = C2H4Z+H2+M	3.819E-07	0.0000	33920.48

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!				
!	375			
C2H6+R1H =	R11C2H5+H2	2.324E-15	1.5000	3724.21
!				
!	376			
C2H6+B6CH2 =	R4CH3+R11C2H5	1.826E-10	0.0000	0.00
!				
!	377			
C2H6+R4CH3 =	R11C2H5+CH4	2.490E-31	6.0000	2918.97
!				
!	378			
C2H6+R9C2HT =	C2H2T+R11C2H5	5.977E-12	0.0000	0.00
!				
!	379			
C2H6+R10C2H3V =	R11C2H5+C2H4Z	9.962E-22	3.3000	5284.35
!				
!	380			
B1O+H2 =	R2OH+R1H	8.468E-20	2.6700	3120.28
!				
!	381			
B1O+B4CH =	B2CO+R1H	6.475E-11	0.0000	0.00
!				
!	382			
B1O+B4CH =	B3C+R2OH	2.490E-11	0.0000	2365.38
!				
!	383			
B1O+B6CH2 =	B2CO+2R1H	2.490E-11	0.0000	0.00
!				
!	384			
B1O+B6CH2 =	B2CO+H2	2.490E-11	0.0000	0.00
!				
!	385			
B1O+B5CH2 =	B2CO+2R1H	1.195E-10	0.0000	0.00
!				
!	386			
B1O+B5CH2 =	B2CO+H2	7.969E-11	0.0000	0.00
!				
!	387			
B1O+R4CH3 =	HCHO+R1H	1.395E-10	0.0000	0.00
!				
!	388			
B1O+R4CH3 =	R7CH3O	1.328E-08	-2.1200	301.96
!				
!	389			
B1O+CH4 =	R4CH3+R2OH	1.195E-15	1.5600	4227.48
!				
!	390			
B1O+R9C2HT =	B4CH+B2CO	1.660E-11	0.0000	0.00
!				
!	391			
B1O+C2H2T =	B5CH2+B2CO	3.603E-18	2.1000	805.23
!				
!	392			
B1O+C2H2T =	R12CHCOV+R1H	8.401E-18	2.1000	805.23
!				
!	393			
B1O+R10C2H3V =	R4CH3+B2CO	4.981E-11	0.0000	0.00
!				
!	394			
B1O+R10C2H3V =	CH2CO+R1H	1.594E-10	0.0000	0.00

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!				
!	395			
B1O+C2H4Z =	R4CH3+R5CHO	1.345E-17	1.8800	100.65
!				
!	396			
B1O+C2H4Z =	HCHO+B5CH2	6.641E-19	1.8800	100.65
!				
!	397			
B1O+C2H4Z =	CH2CO+H2	1.096E-18	1.8800	100.65
!				
!	398			
B1O+C2H4Z =	R13CH2CHO+R1H	7.803E-18	1.8800	100.65
!				
!	399			
B1O+C2H4Z =	R2OH+R10C2H3V	2.490E-17	1.9100	1862.10
!				
!	400			
B1O+R11C2H5 =	HCHO+R4CH3	1.826E-11	0.0000	0.00
!				
!	401			
B1O+R11C2H5 =	CH3CHO+R1H	9.132E-11	0.0000	0.00
!				
!	402			
B1O+R11C2H5 =	C2H4Z+R2OH	4.981E-11	0.0000	0.00
!				
!	403			
B1O+C2H6 =	R11C2H5+R2OH	1.660E-15	1.5000	2918.97
!				
!	404			
R1H+B1O+M =	R2OH+M	3.253E-29	-1.0000	0.00
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	405			
R1H+R2OH+M =	H2O+M	1.524E-25	-2.0000	0.00
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/2.54/ CH4/3/ C2H6/3/ AR/0.14/ N2/0.4/ HE/0.34/			
!				
!	406			
R2OH+H2 =	R1H+H2O	1.660E-16	1.6000	1660.80
!				
!	407			
R2OH+B3C =	B2CO+R1H	8.302E-11	0.0000	0.00
!				
!	408			
R2OH+B4CH =	R5CHO+R1H	4.981E-11	0.0000	0.00
!				
!	409			
R2OH+B6CH2 =	HCHO+R1H	4.981E-11	0.0000	0.00
!				
!	410			
R2OH+B5CH2 =	HCHO+R1H	2.989E-11	0.0000	0.00
!				
!	411			
R2OH+R4CH3 =	B6CH2+H2O	1.195E-10	0.0000	1358.83
!				
!	412			
R2OH+R4CH3 (+M) =	CH3OH (+M)	9.962E-11	0.0000	0.00
	LOW / 3.859E-04 -8.20 0.00 /			
	TROE / 8.2000E-01 2.0000E+02 1.4380E+03 /			
!				
!	413			

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R2OH+R4CH3 = HCHO+H2	5.313E-12	-0.5300	5435.33
!			
! 414			
R2OH+R4CH3 = R7CH3O+R1H	9.464E-12	-0.2300	6995.47
!			
! 415			
R2OH+CH4 = R4CH3+H2O	2.656E-17	1.8300	1358.83
!			
! 416			
R2OH+R9C2HT = C2H2T+B1O	2.989E-11	0.0000	0.00
!			
! 417			
R2OH+R9C2HT = B5CH2+B2CO	2.989E-11	0.0000	0.00
!			
! 418			
R2OH+R9C2HT = R12CHCOV+R1H	3.321E-11	0.0000	0.00
!			
! 419			
R2OH+C2H2T = R9C2HT+H2O	2.324E-20	2.6800	6039.26
!			
! 420			
R2OH+C2H2T = CH2CO+R1H	3.653E-28	4.5000	-503.27
!			
! 421			
R2OH+C2H2T = R4CH3+B2CO	7.969E-28	4.0000	-1006.54
!			
! 422			
R2OH+R10C2H3V = C2H2T+H2O	4.981E-11	0.0000	0.00
!			
! 423			
R2OH+R10C2H3V = CH3CHO	4.981E-11	0.0000	0.00
!			
! 424			
R2OH+C2H4Z = R10C2H3V+H2O	3.321E-11	0.0000	2969.30
!			
! 425			
R2OH+C2H4Z = R4CH3+HCHO	3.321E-12	0.0000	452.94
!			
! 426			
R2OH+R11C2H5 = C2H4Z+H2O	3.985E-11	0.0000	0.00
!			
! 427			
R2OH+R11C2H5 = R4CH3+R1H+HCHO	3.985E-11	0.0000	0.00
!			
! 428			
R2OH+C2H6 = R11C2H5+H2O	1.195E-17	2.0000	452.94
!			
! 429			
2R2OH = H2O+B1O	2.490E-15	1.1400	50.33
!			
! 430			
H2O+B4CH = R6CH2OH	9.464E-12	0.0000	-402.62
!			
! 431			
H2O+B6CH2 = CH3OH	2.989E-11	0.0000	0.00
!			
! 432			
B2CO+R4CH3(+M) = R14CH3CO(+M)	8.302E-13	0.0000	3472.57
LOW / 3.032E-34 0.00 1912.43 /			
TROE / 5.0000E-01 1.0000E+00 1.0000E+08 /			

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!				
!	433			
	B2CO+B1O+M = CO2+M	4.245E-33	0.0000	1509.81
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	434			
	B2CO+R2OH = CO2+R1H	1.046E-17	1.5000	-251.64
!				
!	435			
	R5CHO+M = R1H+B2CO+M	3.155E-07	-1.0000	8555.61
	H2/2/ B2CO/1.5/ CO2/2/ H2O/6/			
!				
!	436			
	R5CHO+R1H = H2+B2CO	1.494E-10	0.0000	0.00
!				
!	437			
	R5CHO+R1H = B1O+B5CH2	6.641E-11	0.0000	51585.31
!				
!	438			
	R5CHO+B6CH2 = R4CH3+B2CO	2.989E-11	0.0000	0.00
!				
!	439			
	R5CHO+B5CH2 = R4CH3+B2CO	2.989E-11	0.0000	0.00
!				
!	440			
	R5CHO+R4CH3 = CH4+B2CO	1.992E-10	0.0000	0.00
!				
!	441			
	R5CHO+R4CH3 = CH3CHO	2.989E-11	0.0000	0.00
!				
!	442			
	R4CH3+HCHO = R5CHO+CH4	1.278E-31	6.1000	991.44
!				
!	443			
	R5CHO+R9C2HT = C2H2T+B2CO	9.962E-11	0.0000	0.00
!				
!	444			
	R5CHO+R10C2H3V = C2H4Z+B2CO	1.494E-10	0.0000	0.00
!				
!	445			
	R10C2H3V+HCHO = R5CHO+C2H4Z	8.966E-21	2.8100	2969.30
!				
!	446			
	R5CHO+R11C2H5 = C2H6+B2CO	1.992E-10	0.0000	0.00
!				
!	447			
	R11C2H5+HCHO = R5CHO+C2H6	9.248E-21	2.8100	2949.17
!				
!	448			
	R5CHO+B1O = R1H+CO2	4.981E-11	0.0000	0.00
!				
!	449			
	R5CHO+B1O = R2OH+B2CO	4.981E-11	0.0000	0.00
!				
!	450			
	R5CHO+R2OH = H2O+B2CO	1.826E-10	0.0000	0.00
!				
!	451			
	2R5CHO = HCHO+B2CO	4.981E-11	0.0000	0.00
!				

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!	452			
HCHO+M =	R5CHO+R1H+M	2.324E+12	-5.5400	48716.66
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	453			
HCHO+M =	H2+B2CO+M	5.413E+12	-5.5400	48716.66
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	454			
HCHO+R1H =	R5CHO+H2	2.158E-16	1.6200	1056.87
!				
!	455			
HCHO+B4CH =	R13CH2CHO	1.594E-10	0.0000	-251.64
!				
!	456			
HCHO+B6CH2 =	R4CH3+R5CHO	1.992E-12	0.0000	0.00
!				
!	457			
HCHO+B1O =	R5CHO+R2OH	6.807E-13	0.5700	1358.83
!				
!	458			
HCHO+R2OH =	R5CHO+H2O	5.645E-15	1.1800	-201.31
!				
!	459			
R7CH3O+M =	HCHO+R1H+M	2.573E-10	0.0000	6794.16
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	460			
R7CH3O+R1H =	HCHO+H2	2.989E-11	0.0000	0.00
!				
!	461			
R7CH3O+B6CH2 =	R4CH3+HCHO	2.989E-11	0.0000	0.00
!				
!	462			
R7CH3O+B5CH2 =	R4CH3+HCHO	2.989E-11	0.0000	0.00
!				
!	463			
R7CH3O+R4CH3 =	HCHO+CH4	3.985E-11	0.0000	0.00
!				
!	464			
R7CH3O+CH4 =	R4CH3+CH3OH	2.656E-13	0.0000	4428.79
!				
!	465			
R7CH3O+R9C2HT =	HCHO+C2H2T	3.985E-11	0.0000	0.00
!				
!	466			
R7CH3O+R10C2H3V =	HCHO+C2H4Z	3.985E-11	0.0000	0.00
!				
!	467			
R7CH3O+C2H4Z =	HCHO+R11C2H5	1.992E-13	0.0000	3371.92
!				
!	468			
R7CH3O+R11C2H5 =	HCHO+C2H6	3.985E-11	0.0000	0.00
!				
!	469			
R7CH3O+C2H6 =	R11C2H5+CH3OH	3.985E-13	0.0000	3522.90
!				
!	470			
R7CH3O+B1O =	HCHO+R2OH	2.989E-12	0.0000	0.00
!				

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!	471			
	R7CH3O+R2OH =	HCHO+H2O	2.989E-11	0.0000 0.00
!				
!	472			
	R7CH3O+B2CO =	R4CH3+CO2	2.656E-11	0.0000 5888.27
!				
!	473			
	R7CH3O+R5CHO =	CH3OH+B2CO	1.511E-10	0.0000 0.00
!				
!	474			
	R7CH3O+HCHO =	CH3OH+R5CHO	1.660E-13	0.0000 1509.81
!				
!	475			
	2R7CH3O =	CH3OH+HCHO	9.962E-11	0.0000 0.00
!				
!	476			
	R6CH2OH+M =	HCHO+R1H+M	2.092E-08	0.0000 15098.14
		O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/		
!				
!	477			
	R6CH2OH+R1H =	R4CH3+R2OH	1.594E-10	0.0000 0.00
!				
!	478			
	R6CH2OH+R1H =	HCHO+H2	9.962E-12	0.0000 0.00
!				
!	479			
	R6CH2OH+H2 =	CH3OH+R1H	1.112E-18	2.0000 6743.84
!				
!	480			
	R6CH2OH+B6CH2 =	CH3CHO+R1H	2.989E-11	0.0000 0.00
!				
!	481			
	R6CH2OH+B5CH2 =	C2H4Z+R2OH	3.985E-11	0.0000 0.00
!				
!	482			
	R6CH2OH+B5CH2 =	R4CH3+HCHO	1.992E-12	0.0000 0.00
!				
!	483			
	R6CH2OH+R4CH3 =	C2H5OH	1.992E-11	0.0000 0.00
!				
!	484			
	R6CH2OH+R4CH3 =	CH4+HCHO	3.985E-12	0.0000 0.00
!				
!	485			
	R6CH2OH+CH4 =	CH3OH+R4CH3	3.603E-23	3.1000 8152.99
!				
!	486			
	R6CH2OH+R9C2HT =	C2H2T+HCHO	7.969E-11	0.0000 0.00
!				
!	487			
	R6CH2OH+C2H2T =	R10C2H3V+HCHO	1.195E-12	0.0000 4529.44
!				
!	488			
	R6CH2OH+R10C2H3V =	C2H4Z+HCHO	6.973E-11	0.0000 0.00
!				
!	489			
	R6CH2OH+R11C2H5 =	C2H4Z+CH3OH	3.985E-12	0.0000 0.00
!				
!	490			
	R6CH2OH+R11C2H5 =	C2H6+HCHO	3.985E-12	0.0000 0.00

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!				
!	491			
	$R6CH2OH + C2H6 = CH3OH + R11C2H5$	$3.304E-22$	3.0000	7045.80
!				
!	492			
	$R6CH2OH + B1O = HCHO + R2OH$	$6.973E-11$	0.0000	0.00
!				
!	493			
	$R6CH2OH + R2OH = H2O + HCHO$	$3.985E-11$	0.0000	0.00
!				
!	494			
	$R6CH2OH + R5CHO = CH3OH + B2CO$	$1.992E-10$	0.0000	0.00
!				
!	495			
	$R6CH2OH + R5CHO = 2HCHO$	$2.989E-10$	0.0000	0.00
!				
!	496			
	$R6CH2OH + HCHO = CH3OH + R5CHO$	$9.132E-21$	2.8000	2969.30
!				
!	497			
	$R6CH2OH + R7CH3O = CH3OH + HCHO$	$3.985E-11$	0.0000	0.00
!				
!	498			
	$2R6CH2OH = CH3OH + HCHO$	$2.324E-11$	0.0000	0.00
!				
!	499			
	$CH3OH + R1H = R4CH3 + H2O$	$3.321E-10$	0.0000	2667.34
!				
!	500			
	$CH3OH + R1H = R7CH3O + H2$	$6.973E-18$	2.1000	2466.03
!				
!	501			
	$CH3OH + B6CH2 = R6CH2OH + R4CH3$	$2.490E-12$	0.0000	0.00
!				
!	502			
	$CH3OH + B5CH2 = R4CH3 + R6CH2OH$	$5.296E-23$	3.2000	3623.55
!				
!	503			
	$CH3OH + B5CH2 = R4CH3 + R7CH3O$	$2.391E-23$	3.1000	3472.57
!				
!	504			
	$CH3OH + R9C2HT = C2H2T + R6CH2OH$	$9.962E-12$	0.0000	0.00
!				
!	505			
	$CH3OH + R9C2HT = C2H2T + R7CH3O$	$1.992E-12$	0.0000	0.00
!				
!	506			
	$CH3OH + R10C2H3V = C2H4Z + R6CH2OH$	$5.296E-23$	3.2000	3623.55
!				
!	507			
	$CH3OH + R10C2H3V = C2H4Z + R7CH3O$	$2.391E-23$	3.1000	3472.57
!				
!	508			
	$CH3OH + B1O = R6CH2OH + R2OH$	$5.645E-11$	0.0000	2767.99
!				
!	509			
	$CH3OH + B1O = R7CH3O + R2OH$	$1.660E-11$	0.0000	2365.38
!				
!	510			
	$CH3OH + R2OH = R6CH2OH + H2O$	$5.147E-18$	2.0000	-171.11

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!				
!	511			
	CH3OH+R2OH = R7CH3O+H2O	8.966E-19	2.0000	-171.11
!				
!	512			
	CH3OH+R7CH3O = CH3OH+R6CH2OH	4.981E-13	0.0000	2063.41
!				
!	513			
	R12CHCOV+M = B4CH+B2CO+M	9.962E-09	0.0000	29592.35
!				
!	514			
	R12CHCOV+R1H = B5CH2+B2CO	2.490E-10	0.0000	0.00
!				
!	515			
	R12CHCOV+R1H = B6CH2+B2CO	2.158E-10	0.0000	0.00
!				
!	516			
	R12CHCOV+B5CH2 = R9C2HT+HCHO	1.660E-11	0.0000	1006.54
!				
!	517			
	R12CHCOV+B5CH2 = R10C2H3V+B2CO	4.981E-11	0.0000	0.00
!				
!	518			
	R12CHCOV+B1O = 2B2CO+R1H	1.594E-10	0.0000	0.00
!				
!	519			
	R12CHCOV+R2OH = R5CHO+B2CO+R1H	1.660E-11	0.0000	0.00
!				
!	520			
	CH2CO+M = B6CH2+B2CO+M	1.091E-08	0.0000	28988.43
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	521			
	CH2CO+M = R12CHCOV+R1H+M	4.483E-07	0.0000	43784.60
	O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
!				
!	522			
	CH2CO+R1H = R4CH3+B2CO	2.989E-11	0.0000	1711.12
!				
!	523			
	CH2CO+R1H = R12CHCOV+H2	8.302E-11	0.0000	4026.17
!				
!	524			
	CH2CO+B5CH2 = C2H4Z+B2CO	2.158E-10	0.0000	0.00
!				
!	525			
	CH2CO+B1O = B5CH2+CO2	2.989E-12	0.0000	654.25
!				
!	526			
	CH2CO+B1O = R12CHCOV+R2OH	1.660E-11	0.0000	4026.17
!				
!	527			
	CH2CO+R2OH = R12CHCOV+H2O	1.245E-11	0.0000	1006.54
!				
!	528			
	CH2CO+R2OH = R4CH3+CO2	4.184E-12	0.0000	0.00
!				
!	529			
	CH2CO+R2OH = R6CH2OH+B2CO	7.770E-12	0.0000	0.00
!				

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!	530			
	$R14CH3CO+R1H = R4CH3+R5CHO$	1.594E-10	0.0000	0.00
!				
!	531			
	$R14CH3CO+B6CH2 = R4CH3+CH2CO$	2.989E-11	0.0000	0.00
!				
!	532			
	$R14CH3CO+B5CH2 = R4CH3+CH2CO$	2.989E-11	0.0000	0.00
!				
!	533			
	$R14CH3CO+B1O = R4CH3+CO2$	1.594E-11	0.0000	0.00
!				
!	534			
	$R14CH3CO+R2OH = CH2CO+H2O$	1.992E-11	0.0000	0.00
!				
!	535			
	$R14CH3CO+R2OH = R4CH3+B2CO+R2OH$	4.981E-11	0.0000	0.00
!				
!	536			
	$R14CH3CO+R5CHO = CH3CHO+B2CO$	1.494E-11	0.0000	0.00
!				
!	537			
	$R14CH3CO+HCHO = CH3CHO+R5CHO$	2.989E-13	0.0000	6492.20
!				
!	538			
	$R14CH3CO+R7CH3O = CH3OH+CH2CO$	9.962E-12	0.0000	0.00
!				
!	539			
	$R14CH3CO+R7CH3O = HCHO+CH3CHO$	9.962E-12	0.0000	0.00
!				
!	540			
	$R14CH3CO+CH3OH = CH3CHO+R6CH2OH$	8.052E-21	3.0000	6190.24
!				
!	541			
	$2R14CH3CO = CH2CO+CH3CHO$	1.992E-11	0.0000	0.00
!				
!	542			
	$R13CH2CHO = R14CH3CO$	1.000E+13	0.0000	23653.75
!				
!	543			
	$R13CH2CHO = R1H+CH2CO$	1.600E+13	0.0000	17614.49
!				
!	544			
	$CH3CHO+R1H = H2+R14CH3CO$	6.641E-11	0.0000	2113.74
!				
!	545			
	$CH3CHO+R4CH3 = R14CH3CO+CH4$	3.321E-30	5.6000	1258.18
!				
!	546			
	$CH3CHO+R10C2H3V = C2H4Z+R14CH3CO$	1.345E-13	0.0000	1862.10
!				
!	547			
	$CH3CHO+R11C2H5 = C2H6+R14CH3CO$	2.158E-12	0.0000	4277.81
!				
!	548			
	$CH3CHO+B1O = R14CH3CO+R2OH$	2.324E-11	0.0000	1157.52
!				
!	549			
	$CH3CHO+R2OH = R14CH3CO+H2O$	6.973E-12	0.0000	251.64
!				

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!	550			
	$\text{CH}_3\text{CHO} + \text{R}_7\text{CH}_3\text{O} = \text{R}_{14}\text{CH}_3\text{CO} + \text{CH}_3\text{OH}$	$3.985\text{E}-13$	0.0000	905.89
!				
!	551			
	$\text{CH}_3\text{CHO} + \text{R}_{13}\text{CH}_2\text{CHO} = \text{CH}_3\text{CHO} + \text{R}_{14}\text{CH}_3\text{CO}$	$4.151\text{E}-17$	0.0000	0.00
!				
!	552			
	$\text{C}_2\text{H}_4\text{O}\#3 = \text{CH}_4 + \text{B}_2\text{CO}$	$1.200\text{E}+13$	0.0000	28787.12
!				
!	553			
	$\text{C}_2\text{H}_4\text{O}\#3 = \text{CH}_3\text{CHO}$	$7.300\text{E}+13$	0.0000	28787.12
!				
!	554			
	$\text{C}_2\text{H}_4\text{O}\#3 = \text{R}_4\text{CH}_3 + \text{R}_5\text{CHO}$	$3.600\text{E}+13$	0.0000	28787.12
!				
!	555			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_1\text{H} = \text{H}_2 + \text{R}_{13}\text{CH}_2\text{CHO}$	$3.321\text{E}-11$	0.0000	4177.15
!				
!	556			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_1\text{H} = \text{H}_2\text{O} + \text{R}_{10}\text{C}_2\text{H}_3\text{V}$	$8.302\text{E}-15$	0.0000	2516.36
!				
!	557			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_1\text{H} = \text{C}_2\text{H}_4\text{Z} + \text{R}_2\text{OH}$	$1.577\text{E}-13$	0.0000	2516.36
!				
!	558			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_4\text{CH}_3 = \text{CH}_4 + \text{R}_{13}\text{CH}_2\text{CHO}$	$1.826\text{E}-12$	0.0000	5938.60
!				
!	559			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_4\text{CH}_3 = \text{R}_{11}\text{C}_2\text{H}_5 + \text{HCHO}$	$2.324\text{E}-13$	0.0000	3824.86
!				
!	560			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_4\text{CH}_3 = \text{C}_2\text{H}_4\text{Z} + \text{R}_7\text{CH}_3\text{O}$	$2.490\text{E}-14$	0.0000	3824.86
!				
!	561			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_9\text{C}_2\text{HT} = \text{C}_2\text{H}_2\text{T} + \text{R}_{13}\text{CH}_2\text{CHO}$	$1.992\text{E}-12$	0.0000	4932.06
!				
!	562			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_{10}\text{C}_2\text{H}_3\text{V} = \text{C}_2\text{H}_4\text{Z} + \text{R}_{13}\text{CH}_2\text{CHO}$	$3.321\text{E}-12$	0.0000	4680.42
!				
!	563			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_{11}\text{C}_2\text{H}_5 = \text{C}_2\text{H}_6 + \text{R}_{13}\text{CH}_2\text{CHO}$	$1.129\text{E}-12$	0.0000	5737.29
!				
!	564			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{B}_{10} = \text{R}_2\text{OH} + \text{R}_{13}\text{CH}_2\text{CHO}$	$3.155\text{E}-12$	0.0000	2617.01
!				
!	565			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_2\text{OH} = \text{H}_2\text{O} + \text{R}_{13}\text{CH}_2\text{CHO}$	$2.989\text{E}-11$	0.0000	1811.78
!				
!	566			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_5\text{CHO} = \text{HCHO} + \text{R}_{13}\text{CH}_2\text{CHO}$	$6.143\text{E}-12$	0.0000	7951.69
!				
!	567			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_7\text{CH}_3\text{O} = \text{CH}_3\text{OH} + \text{R}_{13}\text{CH}_2\text{CHO}$	$2.158\text{E}-12$	0.0000	2918.97
!				
!	568			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_6\text{CH}_2\text{OH} = \text{CH}_3\text{OH} + \text{R}_{13}\text{CH}_2\text{CHO}$	$1.395\text{E}-12$	0.0000	6743.84
!				
!	569			
	$\text{C}_2\text{H}_4\text{O}\#3 + \text{R}_{14}\text{CH}_3\text{CO} = \text{CH}_3\text{CHO} + \text{R}_{13}\text{CH}_2\text{CHO}$	$6.641\text{E}-12$	0.0000	8807.25
!				

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!	570				
	$C_2H_4O\#3+R_{13}CH_2CHO = CH_3CHO+R_{13}CH_2CHO$	1.129E-12	0.0000	7750.38	
!					
!	571				
	$R_{15}C_2H_5O = HCHO+R_4CH_3$	8.000E+13	0.0000	10820.33	
!					
!	572				
	$R_{15}C_2H_5O = CH_3CHO+R_1H$	2.000E+14	0.0000	11726.22	
!					
!	573				
	$C_2H_5OH(+M) = R_{11}C_2H_5+R_2OH(+M)$	1.200E+23	-1.5400	48314.04	
	CO ₂ /3/ H ₂ O/5/ B ₂ CO/2/ H ₂ /2/				
	LOW / 5.313E+61 -18.81 57825.87 /				
	TROE / 5.0000E-01 3.0000E+02 9.0000E+02 5.0000E+03 /				
!					
!	574				
	$C_2H_5OH(+M) = C_2H_4Z+H_2O(+M)$	2.800E+13	0.0900	33266.23	
	H ₂ O/5/				
	LOW / 4.317E+59 -18.85 43532.97 /				
	TROE / 7.0000E-01 3.5000E+02 8.0000E+02 3.8000E+03 /				
!					
!	575				
	$C_2H_5OH(+M) = CH_3CHO+H_2(+M)$	7.200E+11	0.0950	45797.69	
	H ₂ O/5/				
	LOW / 7.471E+63 -19.42 58178.16 /				
	TROE / 9.0000E-01 9.0000E+02 1.1000E+03 3.5000E+03 /				
!					
!	576				
	$C_2H_5OH+R_1H = H_2+R_{15}C_2H_5O$	2.490E-17	1.6000	1529.94	
!					
!	577				
	$C_2H_5OH+B_1O = R_2OH+R_{15}C_2H_5O$	2.656E-17	2.0000	2239.56	
!					
!	578				
	$C_2H_5OH+R_2OH = H_2O+R_{15}C_2H_5O$	1.245E-12	0.3000	805.23	
!					
!	579				
	$C_2H_5OH+R_3OOH = H_2O_2+R_{15}C_2H_5O$	4.151E-12	0.0000	12078.51	
!					
!	580				
	$C_2H_5OH+R_4CH_3 = CH_4+R_{15}C_2H_5O$	2.324E-22	2.9900	3850.03	
!					
!	581				
	$C_2H_5OH+R_1H = H_2+R_2OH+C_2H_4Z$	1.992E-17	1.8000	2566.68	
!					
!	582				
	$C_2H_5OH+B_1O = 2R_2OH+C_2H_4Z$	1.561E-16	1.7000	2747.86	
!					
!	583				
	$C_2H_5OH+R_2OH = H_2O+R_2OH+C_2H_4Z$	2.823E-13	0.2700	301.96	
!					
!	584				
	$C_2H_5OH+R_3OOH = H_2O_2+R_2OH+C_2H_4Z$	1.992E-20	2.5500	7901.36	
!					
!	585				
	$C_2H_5OH+R_4CH_3 = CH_4+R_2OH+C_2H_4Z$	3.653E-22	3.1800	4831.40	
!					
!	586				
	$C_2H_5OH+R_1H = H_2+CH_3CHO+R_1H$	4.317E-17	1.6500	1409.16	
!					

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!	587			
	$C_2H_5OH + B_{1O} = R_{2OH} + CH_3CHO + R_{1H}$	$3.155E-17$	1.8500	915.95
!				
!	588			
	$C_2H_5OH + R_{2OH} = H_2O + CH_3CHO + R_{1H}$	$7.637E-13$	0.1500	0.00
!				
!	589			
	$C_2H_5OH + R_{3OOH} = H_2O_2 + CH_3CHO + R_{1H}$	$1.361E-20$	2.5500	5385.00
!				
!	590			
	$C_2H_5OH + R_{4CH_3} = CH_4 + CH_3CHO + R_{1H}$	$1.212E-21$	2.9900	3975.84
!				
!	591			
	$2B_{1O} + M = O_2 + M$	$1.489E-34$	0.0000	-900.86
	$O_2/0.4/ B_{2CO}/0.75/ CO_2/1.5/ H_2O/6.5/ CH_4/3/ C_2H_6/3/ AR/0.34/ N_2/0.4/ HE/0.34/$			
!				
!	592			
	$O_2 + R_{1H} = R_{2OH} + B_{1O}$	$1.627E-10$	0.0000	7448.41
!				
!	593			
	$O_2 + R_{1H} (+M) = R_{3OOH} (+M)$	$7.505E-11$	0.0000	0.00
	$O_2/0.4/ B_{2CO}/0.75/ CO_2/1.5/ H_2O/0/ CH_4/3/ C_2H_6/3/ AR/0.28/ HE/0.34/ N_2/0.67/$			
	$LOW / 4.962E-30 -0.80 0.00 /$			
	$TROE / 5.0000E-01 1.0000E+00 1.0000E+08 /$			
!				
!	594			
	$O_2 + R_{1H} (+H_2O) = R_{3OOH} (+H_2O)$	$7.505E-11$	0.0000	0.00
	$LOW / 1.902E-32 0.00 -1046.80 /$			
	$TROE / 4.5000E-01 1.0000E+00 1.0000E+08 /$			
!				
!	595			
	$O_2 + B_{3C} = B_{2CO} + B_{1O}$	$1.992E-10$	0.0000	0.00
!				
!	596			
	$O_2 + B_{4CH} = R_{5CHO} + B_{1O}$	$5.479E-11$	0.0000	0.00
!				
!	597			
	$O_2 + B_{4CH} = B_{2CO} + R_{2OH}$	$5.313E-11$	0.0000	0.00
!				
!	598			
	$O_2 + B_{6CH_2} = B_{2CO} + R_{2OH} + R_{1H}$	$5.147E-12$	0.0000	0.00
!				
!	599			
	$O_2 + B_{5CH_2} = R_{5CHO} + R_{2OH}$	$7.139E-14$	0.0000	-251.64
!				
!	600			
	$O_2 + B_{5CH_2} = CO_2 + H_2$	$1.146E-12$	0.0000	251.64
!				
!	601			
	$O_2 + B_{5CH_2} = CO_2 + 2R_{1H}$	$2.656E-12$	0.0000	503.27
!				
!	602			
	$O_2 + B_{5CH_2} = B_{2CO} + H_2O$	$3.155E-14$	0.0000	-503.27
!				
!	603			
	$O_2 + B_{5CH_2} = B_{2CO} + R_{2OH} + R_{1H}$	$1.428E-13$	0.0000	-251.64
!				
!	604			
	$O_2 + B_{5CH_2} = HCHO + B_{1O}$	$1.660E-10$	0.0000	2264.72
!				

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!	605			
	O2+R4CH3 (+M) = R8CH3OO (+M)	1.295E-15	1.2000	0.00
	LOW / 1.544E-22 -3.30 0.00 /			
	TROE / 3.6000E-01 1.0000E+00 1.0000E+08 /			
!				
!	606			
	O2+R4CH3 = R7CH3O+B1O	2.158E-10	0.0000	15752.39
!				
!	607			
	O2+R4CH3 = HCHO+R2OH	4.981E+06	-4.6900	18419.73
!				
!	608			
	O2+CH4 = R4CH3+R3OOH	6.641E-11	0.0000	28535.48
!				
!	609			
	O2+R9C2HT = B2CO+R5CHO	6.309E-11	-0.1600	0.00
!				
!	610			
	O2+R9C2HT = R12CHCOV+B1O	1.494E-11	-0.1600	0.00
!				
!	611			
	O2+C2H2T = R9C2HT+R3OOH	1.992E-11	0.0000	37493.71
!				
!	612			
	O2+C2H2T = 2R5CHO	1.162E-16	1.8000	15400.10
!				
!	613			
	O2+R10C2H3V = C2H2T+R3OOH	2.225E-18	1.6100	-201.31
!				
!	614			
	O2+R10C2H3V = HCHO+R5CHO	7.471E-08	-1.3900	503.27
!				
!	615			
	O2+R10C2H3V = B1O+R13CH2CHO	5.479E-13	-0.2900	5.03
!				
!	616			
	O2+C2H4Z = R10C2H3V+R3OOH	6.973E-11	0.0000	28887.77
!				
!	617			
	O2+R11C2H5 = R15C2H5O+B1O	1.992E-11	-0.2000	14041.27
!				
!	618			
	O2+C2H6 = R11C2H5+R3OOH	9.962E-11	0.0000	26019.13
!				
!	619			
	O2+R2OH = R3OOH+B1O	3.653E-11	0.0000	26421.74
!				
!	620			
	O2+B2CO = CO2+B1O	4.151E-12	0.0000	24006.04
!				
!	621			
	O2+R5CHO = B2CO+R3OOH	1.262E-11	0.0000	206.34
!				
!	622			
	O2+HCHO = R5CHO+R3OOH	3.321E-11	0.0000	19526.93
!				
!	623			
	O2+R7CH3O = HCHO+R3OOH	3.653E-14	0.0000	855.56
!				
!	624			

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O2+R6CH2OH = HCHO+R3OOH	1.992E-12	0.0000	0.00
!			
! 625			
O2+CH3OH = R6CH2OH+R3OOH	3.321E-11	0.0000	22596.88
!			
! 626			
O2+R12CHCOV = 2B2CO+R2OH	2.490E-12	0.0000	1258.18
!			
! 627			
O2+R13CH2CHO = HCHO+R2OH+B2CO	9.796E-15	0.0000	-704.58
!			
! 628			
O2+R13CH2CHO = CH2CO+R3OOH	1.660E-14	0.0000	-704.58
!			
! 629			
O2+CH3CHO = R14CH3CO+R3OOH	8.302E-11	0.0000	18319.07
!			
! 630			
O2+CH3CHO = R13CH2CHO+R3OOH	1.660E-11	0.5000	23150.48
!			
! 631			
O2+C2H4O#3 = R3OOH+R13CH2CHO	8.302E-11	0.0000	24157.02
!			
! 632			
O2+R15C2H5O = CH3CHO+R3OOH	9.962E-14	0.0000	855.56
!			
! 633			
R3OOH+R1H = H2+O2	7.139E-11	0.0000	704.58
!			
! 634			
R3OOH+R1H = 2R2OH	2.823E-10	0.0000	452.94
!			
! 635			
R3OOH+R1H = H2O+B1O	4.981E-11	0.0000	855.56
!			
! 636			
R3OOH+B6CH2 = HCHO+R2OH	4.981E-11	0.0000	0.00
!			
! 637			
R3OOH+B5CH2 = HCHO+R2OH	2.989E-11	0.0000	0.00
!			
! 638			
R3OOH+R4CH3 = R7CH3O+R2OH	2.989E-11	0.0000	0.00
!			
! 639			
R3OOH+CH4 = R4CH3+H2O2	1.494E-11	0.0000	12380.47
!			
! 640			
R3OOH+R9C2HT = R12CHCOV+R2OH	2.989E-11	0.0000	0.00
!			
! 641			
R3OOH+C2H2T = CH2CO+R2OH	9.962E-15	0.0000	4026.17
!			
! 642			
R3OOH+R10C2H3V = R2OH+R4CH3+B2CO	4.981E-11	0.0000	0.00
!			
! 643			
R3OOH+C2H4Z = CH3CHO+R2OH	9.962E-15	0.0000	3975.84
!			
! 644			

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R3OOH+C2H4Z = C2H4O#3+R2OH	3.653E-12	0.0000	8656.27
!			
! 645			
R3OOH+R11C2H5 = R4CH3+HCHO+R2OH	3.985E-11	0.0000	0.00
!			
! 646			
R3OOH+R11C2H5 = C2H4Z+H2O2	4.981E-13	0.0000	0.00
!			
! 647			
R3OOH+C2H6 = R11C2H5+H2O2	2.158E-11	0.0000	10266.73
!			
! 648			
R3OOH+R2OH = H2O+O2	4.815E-11	0.0000	-251.64
!			
! 649			
R3OOH+B2CO = CO2+R2OH	2.490E-10	0.0000	11877.20
!			
! 650			
R3OOH+R5CHO = R2OH+R1H+CO2	4.981E-11	0.0000	0.00
!			
! 651			
R3OOH+HCHO = R5CHO+H2O2	4.981E-12	0.0000	6542.53
!			
! 652			
R3OOH+R7CH3O = HCHO+H2O2	4.981E-13	0.0000	0.00
!			
! 653			
R3OOH+R6CH2OH = HCHO+H2O2	1.992E-11	0.0000	0.00
!			
! 654			
R3OOH+CH3OH = R6CH2OH+H2O2	1.594E-13	0.0000	6341.22
!			
! 655			
R3OOH+R14CH3CO = R4CH3+CO2+R2OH	4.981E-11	0.0000	0.00
!			
! 656			
R3OOH+CH3CHO = R14CH3CO+H2O2	1.660E-12	0.0000	5032.71
!			
! 657			
R3OOH+C2H4O#3 = H2O2+R13CH2CHO	2.656E-12	0.0000	7549.07
!			
! 658			
2R3OOH = H2O2+O2	2.158E-13	0.0000	-820.33
DUPLICATE			
!			
! 659			
2R3OOH = H2O2+O2	6.973E-10	0.0000	6029.19
DUPLICATE			
!			
! 660			
H2O2(+M) = 2R2OH(+M)	3.000E+14	0.0000	24408.66
O2/0.4/ B2CO/0.75/ CO2/1.5/ H2O/6.5/ CH4/3/ C2H6/3/ AR/0.34/ N2/0.4/ HE/0.34/			
LOW / 4.981E-07 0.00 22898.84 /			
TROE / 5.0000E-01 1.0000E+00 1.0000E+08 /			
!			
! 661			
H2O2+R1H = H2+R3OOH	2.823E-12	0.0000	1862.10
!			
! 662			
H2O2+R1H = H2O+R2OH	1.660E-11	0.0000	1811.78

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!				
!	663			
	$\text{H}_2\text{O}_2 + \text{B}_6\text{CH}_2 = \text{R}_7\text{CH}_3\text{O} + \text{R}_2\text{OH}$	4.981E-11	0.0000	0.00
!				
!	664			
	$\text{H}_2\text{O}_2 + \text{R}_{10}\text{C}_2\text{H}_3\text{V} = \text{C}_2\text{H}_4\text{Z} + \text{R}_3\text{OOH}$	1.992E-14	0.0000	-301.96
!				
!	665			
	$\text{H}_2\text{O}_2 + \text{B}_{10} = \text{R}_2\text{OH} + \text{R}_3\text{OOH}$	1.096E-12	0.0000	2013.09
!				
!	666			
	$\text{H}_2\text{O}_2 + \text{R}_2\text{OH} = \text{H}_2\text{O} + \text{R}_3\text{OOH}$	1.295E-11	0.0000	654.25
!				
!	667			
	$\text{CO}_2 + \text{B}_5\text{CH}_2 = \text{HCHO} + \text{B}_2\text{CO}$	3.819E-14	0.0000	0.00
!				
!	668			
	$\text{R}_8\text{CH}_3\text{OO} = \text{HCHO} + \text{R}_2\text{OH}$	1.500E+13	0.0000	23653.75
!				
!	669			
	$\text{R}_8\text{CH}_3\text{OO} + \text{R}_1\text{H} = \text{R}_7\text{CH}_3\text{O} + \text{R}_2\text{OH}$	1.594E-10	0.0000	0.00
!				
!	670			
	$\text{R}_8\text{CH}_3\text{OO} + \text{H}_2 = \text{CH}_3\text{OOH} + \text{R}_1\text{H}$	4.981E-11	0.0000	13085.05
!				
!	671			
	$\text{R}_8\text{CH}_3\text{OO} + \text{B}_6\text{CH}_2 = \text{HCHO} + \text{R}_7\text{CH}_3\text{O}$	2.989E-11	0.0000	0.00
!				
!	672			
	$\text{R}_8\text{CH}_3\text{OO} + \text{B}_5\text{CH}_2 = \text{HCHO} + \text{R}_7\text{CH}_3\text{O}$	2.989E-11	0.0000	0.00
!				
!	673			
	$\text{R}_8\text{CH}_3\text{OO} + \text{R}_4\text{CH}_3 = 2\text{R}_7\text{CH}_3\text{O}$	8.302E-12	0.0000	-704.58
!				
!	674			
	$\text{R}_8\text{CH}_3\text{OO} + \text{CH}_4 = \text{CH}_3\text{OOH} + \text{R}_4\text{CH}_3$	2.989E-13	0.0000	9310.52
!				
!	675			
	$\text{R}_8\text{CH}_3\text{OO} + \text{R}_9\text{C}_2\text{HT} = \text{R}_7\text{CH}_3\text{O} + \text{R}_{12}\text{CHCOV}$	3.985E-11	0.0000	0.00
!				
!	676			
	$\text{R}_8\text{CH}_3\text{OO} + \text{C}_2\text{H}_2\text{T} = \text{CH}_3\text{OOH} + \text{R}_9\text{C}_2\text{HT}$	9.298E-13	0.0000	12330.15
!				
!	677			
	$\text{R}_8\text{CH}_3\text{OO} + \text{R}_{10}\text{C}_2\text{H}_3\text{V} = \text{R}_7\text{CH}_3\text{O} + \text{R}_{13}\text{CH}_2\text{CHO}$	3.985E-11	0.0000	0.00
!				
!	678			
	$\text{R}_8\text{CH}_3\text{OO} + \text{C}_2\text{H}_4\text{Z} = \text{R}_7\text{CH}_3\text{O} + \text{C}_2\text{H}_4\text{O}\#3$	1.826E-09	0.0000	10065.43
!				
!	679			
	$\text{R}_8\text{CH}_3\text{OO} + \text{C}_2\text{H}_4\text{Z} = \text{CH}_3\text{OOH} + \text{R}_{10}\text{C}_2\text{H}_3\text{V}$	6.475E-12	0.0000	12330.15
!				
!	680			
	$\text{R}_8\text{CH}_3\text{OO} + \text{R}_{11}\text{C}_2\text{H}_5 = \text{R}_7\text{CH}_3\text{O} + \text{R}_{15}\text{C}_2\text{H}_5\text{O}$	3.985E-11	0.0000	0.00
!				
!	681			
	$\text{R}_8\text{CH}_3\text{OO} + \text{C}_2\text{H}_6 = \text{CH}_3\text{OOH} + \text{R}_{11}\text{C}_2\text{H}_5$	4.815E-13	0.0000	7498.74
!				
!	682			
	$\text{R}_8\text{CH}_3\text{OO} + \text{B}_{10} = \text{R}_7\text{CH}_3\text{O} + \text{O}_2$	5.977E-11	0.0000	0.00

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!				
!	683			
	$R8CH3OO+R2OH = CH3OH+O2$	9.962E-11	0.0000	0.00
!				
!	684			
	$R8CH3OO+R2OH = R7CH3O+R3OOH$	4.981E-12	0.0000	0.00
!				
!	685			
	$R8CH3OO+B2CO = R7CH3O+CO2$	1.660E-10	0.0000	12078.51
!				
!	686			
	$R8CH3OO+R5CHO = R7CH3O+R1H+CO2$	4.981E-11	0.0000	0.00
!				
!	687			
	$R8CH3OO+HCHO = CH3OOH+R5CHO$	1.660E-12	0.0000	6089.58
!				
!	688			
	$R8CH3OO+R7CH3O = HCHO+CH3OOH$	4.981E-13	0.0000	0.00
!				
!	689			
	$R8CH3OO+R6CH2OH = R7CH3O+R2OH+HCHO$	1.992E-11	0.0000	0.00
!				
!	690			
	$R8CH3OO+CH3OH = CH3OOH+R6CH2OH$	2.989E-12	0.0000	6894.82
!				
!	691			
	$R8CH3OO+CH3OH = CH3OOH+R7CH3O$	4.649E-13	0.0000	9461.50
!				
!	692			
	$R8CH3OO+CH2CO = CH3OOH+R12CHCOV$	2.823E-12	0.0000	13588.32
!				
!	693			
	$R8CH3OO+R14CH3CO = R4CH3+CO2+R7CH3O$	3.985E-11	0.0000	0.00
!				
!	694			
	$R8CH3OO+CH3CHO = CH3OOH+R14CH3CO$	1.660E-12	0.0000	6089.58
!				
!	695			
	$R8CH3OO+CH3CHO = CH3OOH+R13CH2CHO$	2.823E-12	0.0000	9662.81
!				
!	696			
	$R8CH3OO+C2H4O\#3 = CH3OOH+R13CH2CHO$	3.653E-12	0.0000	8052.34
!				
!	697			
	$R8CH3OO+R3OOH = CH3OOH+O2$	4.151E-13	0.0000	-805.23
!				
!	698			
	$R8CH3OO+R3OOH = O2+HCHO+H2O$	8.302E-14	0.0000	0.00
!				
!	699			
	$R8CH3OO+H2O2 = CH3OOH+R3OOH$	3.985E-12	0.0000	4982.39
!				
!	700			
	$2R8CH3OO = CH3OH+HCHO+O2$	4.151E-14	0.0000	-402.62
!				
!	701			
	$2R8CH3OO = 2R7CH3O+O2$	4.151E-14	0.0000	-402.62
!				
!	702			
	$CH3OOH = R7CH3O+R2OH$	6.000E+14	0.0000	21288.38

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!				
!	703			
	CH3OOH+B1O = R8CH3OO+R2OH	3.321E-11	0.0000	2415.70
!				
!	704			
	CH3OOH+R2OH = H2O+R8CH3OO	2.989E-12	0.0000	-186.21
!				
!	705			
	CH3OOH+R7CH3O = CH3OH+R2OH+HCHO	2.490E-13	0.0000	3271.26
!				
!	706			
	R17C2H5OO+H2 = C2H5OOH+R1H	1.312E-11	0.0000	10568.70
!				
!	707			
	R17C2H5OO+R4CH3 = R15C2H5O+R7CH3O	3.321E-12	0.0000	-603.93
!				
!	708			
	R17C2H5OO+CH4 = C2H5OOH+R4CH3	6.475E-12	0.0000	12078.51
!				
!	709			
	R17C2H5OO+C2H2T = C2H5OOH+R9C2HT	9.298E-13	0.0000	12279.82
!				
!	710			
	R17C2H5OO+C2H4Z = C2H5OOH+R10C2H3V	6.475E-12	0.0000	12279.82
!				
!	711			
	R17C2H5OO+C2H4Z = R15C2H5O+C2H4O#3	3.819E-08	0.0000	11021.64
!				
!	712			
	R17C2H5OO+C2H6 = C2H5OOH+R11C2H5	8.468E-12	0.0000	9813.79
!				
!	713			
	R17C2H5OO+H2O = C2H5OOH+R2OH	9.298E-12	0.0000	15400.10
!				
!	714			
	R17C2H5OO+B2CO = CO2+R15C2H5O	1.660E-10	0.0000	12078.51
!				
!	715			
	R17C2H5OO+HCHO = C2H5OOH+R5CHO	7.471E-12	0.0000	7247.11
!				
!	716			
	R17C2H5OO+CH3OH = C2H5OOH+R7CH3O	4.649E-13	0.0000	9260.19
!				
!	717			
	R17C2H5OO+CH3OH = C2H5OOH+R6CH2OH	4.649E-12	0.0000	9813.79
!				
!	718			
	R17C2H5OO+CH2CO = C2H5OOH+R12CHCOV	2.823E-12	0.0000	12279.82
!				
!	719			
	R17C2H5OO+CH3CHO = C2H5OOH+R14CH3CO	6.475E-12	0.0000	7247.11
!				
!	720			
	R17C2H5OO+CH3CHO = C2H5OOH+R13CH2CHO	2.823E-12	0.0000	9813.79
!				
!	721			
	R17C2H5OO+C2H4O#3 = C2H5OOH+R13CH2CHO	3.653E-12	0.0000	8203.32
!				
!	722			
	R17C2H5OO+R3OOH = O2+C2H5OOH	6.475E-13	0.0000	-654.25

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!				
!	723			
R17C2H5OO+H2O2 =	C2H5OOH+R3OOH	7.471E-13	0.0000	5435.33
!				
!	724			
R17C2H5OO+R8CH3OO =	R15C2H5O+R7CH3O+O2	3.321E-13	0.0000	0.00
!				
!	725			
R17C2H5OO+CH3OOH =	C2H5OOH+R8CH3OO	1.826E-12	0.0000	8203.32
!				
!	726			
2R17C2H5OO =	2R15C2H5O+O2	6.807E-14	0.0000	100.65
!				
!	727			
2R17C2H5OO =	C2H5OH+CH3CHO+O2	2.989E-14	0.0000	100.65
!				
!	728			
R16C2H4OOH =	R6CH2OH+HCHO	2.500E+13	0.0000	13839.96
!				
!	729			
C2H5OOH =	R15C2H5O+R2OH	4.000E+15	0.0000	21590.34
!				
!	730			
C2H5OOH+R1H =	CH3CHO+R2OH+H2	5.313E-11	0.0000	3875.19
!				
!	731			
C2H5OOH+R4CH3 =	CH3CHO+R2OH+CH4	9.464E-13	0.0000	4378.46
!				
!	732			
C2H5OOH+R9C2HT =	CH3CHO+R2OH+C2H2T	9.962E-13	0.0000	4630.10
!				
!	733			
C2H5OOH+R10C2H3V =	CH3CHO+R2OH+C2H4Z	1.660E-12	0.0000	4378.46
!				
!	734			
C2H5OOH+R11C2H5 =	CH3CHO+R2OH+C2H6	5.645E-13	0.0000	5737.29
!				
!	735			
C2H5OOH+R2OH =	CH3CHO+R2OH+H2O	9.796E-12	0.0000	452.94
!				
!	736			
C2H5OOH+R5CHO =	CH3CHO+R2OH+HCHO	2.989E-12	0.0000	8404.63
!				
!	737			
C2H5OOH+R7CH3O =	CH3CHO+R2OH+CH3OH	1.046E-12	0.0000	2767.99
!				
!	738			
C2H5OOH+R6CH2OH =	CH3CHO+R2OH+CH3OH	6.973E-13	0.0000	6844.49
!				
!	739			
C2H5OOH+R14CH3CO =	2CH3CHO+R2OH	3.321E-12	0.0000	9310.52
!				
!	740			
C2H5OOH+R13CH2CHO =	2CH3CHO+R2OH	5.645E-13	0.0000	7901.36
!				
!	741			
C2H5OOH+R3OOH =	CH3CHO+R2OH+H2O2	1.328E-12	0.0000	8152.99
!				
!	742			
C2H5OOH+R8CH3OO =	CH3CHO+R2OH+CH3OOH	1.826E-12	0.0000	8404.63

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!				
!	743			
	$R18CH3OOH+R17C2H5OO = CH3CHO+R2OH+C2H5OOH$	1.826E-12	0.0000	8404.63
!				
!	744			
	$R18CH3COOO+C2H4O\#3 = CH3COOOH+R13CH2CHO$	1.660E-12	0.0000	4680.42
!				
!	745			
	$R18CH3COOO+R3OOH = CH3COOOH+O2$	9.132E-14	0.0000	-1308.51
!				
!	746			
	$R18CH3COOO+C2H5OOH = CH3COOOH+R17C2H5OO$	8.302E-13	0.0000	4630.10
!				
!	747			
	$R18CH3COOO+C2H5OOH = CH3CHO+R2OH+CH3COOOH$	8.302E-13	0.0000	4630.10
!				
!	748			
	$2R18CH3COOO = 2R4CH3+O2+2CO2$	2.823E-12	0.0000	-503.27
!				
!	749			
	$CH3COOOH = R4CH3+CO2+R2OH$	1.000E+16	0.0000	20130.85
!				
!	750			
	$R11C2H5+R10C2H3V = C4H8Y$	2.490E-11	0.0000	0.00
!				
!	751			
	$2R11C2H5 = C4H10$	1.826E-11	0.0000	0.00
!				
!	752			
	$R5CHO+R10C2H3V = C2H3CHOZ$	2.989E-11	0.0000	0.00
!				
!	753			
	$R5CHO+R11C2H5 = C2H5CHO$	2.989E-11	0.0000	0.00
!				
!	754			
	$R6CH2OH+R11C2H5 = C3H7OH$	1.992E-11	0.0000	0.00
!				
!	755			
	$R14CH3CO+R4CH3 = C2H6CO$	6.641E-09	-0.8000	0.00
!				
!	756			
	$R14CH3CO+R11C2H5 = C3H8CO$	5.147E-10	-0.5000	0.00
!				
!	757			
	$C2H3CHOZ+R2OH = B2CO+R10C2H3V+H2O$	1.660E-11	0.0000	0.00
!				
!	758			
	$C2H3CHOZ+B1O = B2CO+R10C2H3V+R2OH$	1.195E-11	0.0000	1006.54
!				
!	759			
	$C2H3CHOZ+B1O = CH2CO+R5CHO+R1H$	8.302E-17	1.7600	40.26
!				
!	760			
	$C2H3CHOZ+R1H = B2CO+R10C2H3V+H2$	6.641E-11	0.0000	2113.74
!				
!	761			
	$C2H3CHOZ+R1H = C2H4Z+R5CHO$	3.321E-11	0.0000	1761.45
!				
!	762			
	$C2H3CHOZ+O2 = B2CO+R10C2H3V+R3OOH$	4.981E-11	0.0000	18117.77

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```
!  
! 763  
ZC3H5Y+R3OOH = C2H3CHOZ+R1H+R2OH      1.162E-05  -2.0000      0.00  
!  
! 764  
ZC3H5Y+O2 = C2H3CHOZ+R2OH              2.989E-11  -0.4100     11524.91  
!  
! 765  
ZC3H5Y+B1O = C2H3CHOZ+R1H              2.989E-10   0.0000      0.00  
END  
!-----!  
! The mechanism was reprinted by program MECHMOD v1.5 !  
!-----!
```