ELEMENTS
O H C N AR
END

SPECIES
H2
H
O
O2
OH
H2O
HO2
H2O2
C
CH
CH2
CH2(S)
CH3
CH4
CO
CO2
HCO
CH2O
CH2OH
CH3O
CH3OH
C2H
C2H2
C2H3
C2H4
C2H5
C2H6
HCCO
CH2CO
HCCOH
N2
AR
C3H7
C3H8
CH2CHO
CH3CHO
C3H4
C3H3
C3H5

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C3H6
C3H6OOH
OC3H5OOH
C4H10
PC4H9
SC4H9
C4H8
CHCHO
SC4H9O2
CH3CO
END

REACTIONS
2O+M<=>O2+M                    1.200E+17      -1.000              .00
H2/ 2.40/ H2O/15.40/ CH4/ 2.00/ CO/ 1.75/ CO2/ 3.60/ C2H6/ 3.00/ AR/    .83/
O+H+M<=>OH+M                                                    5.000E+17        -
1.000              .00
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
O+H2<=>H+OH                   3.870E+04        2.700        6260.00
O+HO2<=>OH+O2                 2.000E+13         .000             .00
O+H2O2<=>OH+HO2               9.630E+06        2.000        4000.00
O+CH<=>H+CO                   5.700E+13         .000             .00
O+CH2<=>H+HCO                 8.000E+13         .000             .00
O+CH2(S)<=>H2+CO              1.500E+13         .000             .00
O+CH2(S)<=>H+HCO              1.500E+13         .000             .00
O+CH3<=>H+CH2O                5.060E+13         .000             .00
O+CH4<=>OH+CH3                1.020E+09        1.500        8600.00
O+CO(+M)<=>CO2(+M)            1.800E+10         .000        2385.00
     LOW/ 6.020E+14          .000        3000.00/
H2/2.00/ O2/6.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/3.50/ C2H6/3.00/ AR/ .50/
O+HCO<=>OH+CO                 3.000E+13         .000             .00
O+HCO<=>H+CO2                 3.000E+13         .000             .00
O+CH2O<=>OH+HCO               3.900E+13         .000        3540.00
O+CH2OH<=>OH+CH2O             1.000E+13         .000             .00
O+CH3O<=>OH+CH2O              1.000E+13         .000             .00
O+CH3OH<=>OH+CH2OH            3.880E+05        2.500        3100.00
O+CH3OH<=>OH+CH3O             1.300E+05        2.500        5000.00
O+C2H<=>CH+CO                 5.000E+13         .000             .00
O+C2H2<=>H+HCCO               1.350E+07        2.000        1900.00
O+C2H2<=>OH+C2H               4.600E+19       -1.410       28950.00
O+C2H2<=>CO+CH2               6.940E+06        2.000        1900.00
O+C2H3<=>H+CH2CO              3.000E+13         .000             .00
O+C2H4<=>CH3+HCO              1.250E+07        1.830         220.00
O+C2H5<=>CH3+CH2O             2.240E+13         .000             .00
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O+C2H6<=>OH+C2H5          8.980E+07       1.920       5690.00
O+HCCO<=>H+2CO            1.000E+14        .000            .00
O+CH2CO<=>OH+HCCO         1.000E+13        .000       8000.00
O+CH2CO<=>CH2+CO2         1.750E+12        .000       1350.00
O2+CO<=>O+CO2             2.500E+12        .000      47800.00
O2+CH2O<=>HO2+HCO         1.000E+14        .000      40000.00
H+O2+M<=>HO2+M            2.800E+18       -.860            .00
O2/ .00/ H2O/ .00/ CO/ .75/ CO2/1.50/ C2H6/1.50/ N2/ .00/ AR/ .00/
H+2O2<=>HO2+O2            2.080E+19      -1.240            .00
H+O2+H2O<=>HO2+H2O        11.26E+18       -.760            .00
H+O2+N2<=>HO2+N2          2.600E+19      -1.240            .00
H+O2+AR<=>HO2+AR          7.000E+17       -.800            .00
H+O2<=>O+OH               2.650E+16       -.6707    17041.00
2H+M<=>H2+M               1.000E+18      -1.000            .00
H2/ .00/ H2O/ .00/ CH4/2.00/ CO2/ .00/ C2H6/3.00/ AR/ .63/
2H+H2<=>2H2               9.000E+16       -.600            .00
2H+H2O<=>H2+H2O           6.000E+19      -1.250            .00
2H+CO2<=>H2+CO2           5.500E+20      -2.000            .00
H+OH+M<=>H2O+M            2.200E+22      -2.000            .00
H2/ .73/ H2O/3.65/ CH4/2.00/ C2H6/3.00/ AR/ .38/
H+HO2<=>O+H2O             3.970E+12        .000        671.00
H+HO2<=>O2+H2             4.480E+13        .000       1068.00
H+HO2<=>2OH               0.840E+14        .000        635.00
H+H2O2<=>HO2+H2           1.210E+07       2.000       5200.00
H+H2O2<=>OH+H2O           1.000E+13        .000       3600.00
H+CH<=>C+H2               1.650E+14        .000            .00
H+CH2(+M)<=>CH3(+M)       6.000E+14        .000            .00
        LOW   /   1.040E+26     -2.760      1600.00/
        TROE/     .5620   91.00    5836.00    8552.00/
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+CH2(S)<=>CH+H2          3.000E+13        .000            .00
H+CH3(+M)<=>CH4(+M)       13.90E+15       -.534         536.00
        LOW   /   2.620E+33     -4.760      2440.00/
        TROE/     .7830     74.00    2941.00    6964.00 /
H2/2.00/ H2O/6.00/ CH4/3.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+CH4<=>CH3+H2            6.600E+08       1.620      10840.00
H+HCO(+M)<=>CH2O(+M)      1.090E+12        .480       -260.00
        LOW   /   2.470E+24     -2.570       425.00/
        TROE/     .7824   271.00    2755.00    6570.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+HCO<=>H2+CO             7.340E+13        .000            .00
H+CH2O(+M)<=>CH2OH(+M) 5.400E+11         .454       3600.00
        LOW   /   1.270E+32     -4.820      6530.00/
        TROE/     .7187   103.00    1291.00    4160.00 /
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H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
H+CH2O(+M)<=>CH3O(+M) 5.400E+11          .454        2600.00
        LOW   /   2.200E+30      -4.800      5560.00/
        TROE/     .7580      94.00    1555.00    4200.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
H+CH2O<=>HCO+H2                  5.740E+07        1.900        2742.00
H+CH2OH(+M)<=>CH3OH(+M) 1.055E+12          .500           86.00
        LOW   /   4.360E+31      -4.650      5080.00/
        TROE/     .600    100.00    90000.0    10000.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
H+CH2OH<=>H2+CH2O            2.000E+13          .000              .00
H+CH2OH<=>OH+CH3             1.650E+11          .650        -284.00
H+CH2OH<=>CH2(S)+H2O      3.280E+13        -.090          610.00
H+CH3O(+M)<=>CH3OH(+M) 2.430E+12          .515           50.00
        LOW   /   4.660E+41      -7.440      14080.0/
        TROE/     .700    100.00    90000.0 10000.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
H+CH3O<=>H+CH2OH             4.150E+07        1.630        1924.00
H+CH3O<=>H2+CH2O             2.000E+13          .000              .00
H+CH3O<=>OH+CH3              1.500E+12          .500        -110.00
H+CH3O<=>CH2(S)+H2O        2.620E+14        -.230        1070.00
H+CH3OH<=>CH2OH+H2          1.700E+07        2.100        4870.00
H+CH3OH<=>CH3O+H2            4.200E+06        2.100        4870.00
H+C2H(+M)<=>C2H2(+M)      1.000E+17      -1.000              .00
        LOW   /   3.750E+33      -4.800      1900.00/
        TROE/     .6464    132.00    1315.00    5566.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C2H2(+M)<=>C2H3(+M)    5.600E+12          .000        2400.00
        LOW   /   3.800E+40      -7.270      7220.00/
        TROE/     .7507      98.50    1302.00    4167.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C2H3(+M)<=>C2H4(+M)    6.080E+12          .270          280.00
        LOW   /   1.400E+30      -3.860      3320.00/
        TROE/     .7820    207.50    2663.00    6095.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C2H3<=>H2+C2H2             3.000E+13          .000              .00
H+C2H4(+M)<=>C2H5(+M)    0.540E+12          .454        1820.00
        LOW   /   0.600E+42      -7.620      6970.00/
        TROE/     .9753    210.00      984.00    4374.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C2H4<=>C2H3+H2             1.325E+06        2.530      12240.00
H+C2H5(+M)<=>C2H6(+M)    5.210E+17        -.990        1580.00
        LOW   /   1.990E+41      -7.080      6685.00/
        TROE/     .8422    125.00    2219.00    6882.00 /
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H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C2H5<=>H2+C2H4              2.000E+12          .000              .00
H+C2H6<=>C2H5+H2              1.150E+08         1.900         7530.00
H+HCCO<=>CH2(S)+CO            1.000E+14          .000              .00
H+CH2CO<=>HCCO+H2             5.000E+13          .000         8000.00
H+CH2CO<=>CH3+CO              1.130E+13          0.500        3428.00
H+HCCOH<=>H+CH2CO             1.000E+13          .000              .00
H2+CO(+M)<=>CH2O(+M)      4.300E+07        1.500      79600.00
        LOW   /   5.070E+27      -3.420    84350.00/
        TROE/      .9320    197.00    1540.00 10300.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
OH+H2<=>H+H2O                 2.160E+08         1.510        3430.00
2OH(+M)<=>H2O2(+M)            7.400E+13         -.370             .00
        LOW   /   2.300E+18        -.900    -1700.00/
        TROE/      .7346      94.00    1756.00    5182.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
2OH<=>O+H2O                   3.570E+04         2.400       -2110.00
OH+HO2<=>O2+H2O               1.450E+13          .000        -500.00
  DUPLICATE
OH+H2O2<=>HO2+H2O             2.000E+12          .000         427.00
  DUPLICATE
OH+H2O2<=>HO2+H2O             1.700E+18          .000       29410.00
  DUPLICATE
OH+C<=>H+CO                   5.000E+13          .000              .00
OH+CH<=>H+HCO                 3.000E+13          .000              .00
OH+CH2<=>H+CH2O               2.000E+13          .000              .00
OH+CH2<=>CH+H2O               1.130E+07         2.000        3000.00
OH+CH2(S)<=>H+CH2O            3.000E+13          .000              .00
OH+CH3(+M)<=>CH3OH(+M) 2.790E+18       -1.430        1330.00
        LOW   /   4.000E+36      -5.920      3140.00/
        TROE/      .4120    195.0    5900.00    6394.00/
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
OH+CH3<=>CH2+H2O              5.600E+07         1.600        5420.00
OH+CH3<=>CH2(S)+H2O           6.440E+17        -1.340        1417.00
OH+CH4<=>CH3+H2O              1.000E+08         1.600        3120.00
OH+CO<=>H+CO2                 4.760E+07         1.228          70.00
OH+HCO<=>H2O+CO               5.000E+13          .000              .00
OH+CH2O<=>HCO+H2O             3.430E+09         1.180        -447.00
OH+CH2OH<=>H2O+CH2O           5.000E+12          .000              .00
OH+CH3O<=>H2O+CH2O            5.000E+12          .000              .00
OH+CH3OH<=>CH2OH+H2O          1.440E+06         2.000        -840.00
OH+CH3OH<=>CH3O+H2O           6.300E+06         2.000        1500.00
OH+C2H<=>H+HCCO               2.000E+13          .000              .00
OH+C2H2<=>H+CH2CO             2.180E-04         4.500       -1000.00
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OH+C2H2<=>H+HCCOH           5.040E+05       2.300      13500.00
OH+C2H2<=>C2H+H2O           3.370E+07       2.000      14000.00
OH+C2H2<=>CH3+CO            4.830E-04       4.000      -2000.00
OH+C2H3<=>H2O+C2H2          5.000E+12        .000           .00
OH+C2H4<=>C2H3+H2O          3.600E+06       2.000       2500.00
OH+C2H6<=>C2H5+H2O          3.540E+06       2.120        870.00
OH+CH2CO<=>HCCO+H2O         7.500E+12        .000       2000.00
2HO2<=>O2+H2O2              1.300E+11        .000      -1630.00
  DUPLICATE
2HO2<=>O2+H2O2              4.200E+14        .000      12000.00
  DUPLICATE
HO2+CH2<=>OH+CH2O           2.000E+13        .000           .00
HO2+CH3<=>O2+CH4            1.000E+12        .000           .00
HO2+CH3<=>OH+CH3O           3.780E+13        .000           .00
HO2+CO<=>OH+CO2             1.500E+14        .000      23600.00
HO2+CH2O<=>HCO+H2O2         5.600E+06       2.000      12000.00
C+O2<=>O+CO                 5.800E+13        .000        576.00
C+CH2<=>H+C2H               5.000E+13        .000           .00
C+CH3<=>H+C2H2              5.000E+13        .000           .00
CH+O2<=>O+HCO               6.710E+13        .000           .00
CH+H2<=>H+CH2               1.080E+14        .000       3110.00
CH+H2O<=>H+CH2O             5.710E+12        .000       -755.00
CH+CH2<=>H+C2H2             4.000E+13        .000           .00
CH+CH3<=>H+C2H3             3.000E+13        .000           .00
CH+CH4<=>H+C2H4             6.000E+13        .000           .00
CH+CO(+M)<=>HCCO(+M)        5.000E+13        .000           .00
        LOW   /   2.690E+28     -3.740      1936.00/
        TROE/     .5757    237.00    1652.00    5069.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
CH+CO2<=>HCO+CO             1.900E+14        .000      15792.00
CH+CH2O<=>H+CH2CO           9.460E+13        .000       -515.00
CH+HCCO<=>CO+C2H2           5.000E+13        .000           .00
CH2+O2=>OH+H+CO             5.000E+12        .000       1500.00
CH2+H2<=>H+CH3              5.000E+05       2.000       7230.00
2CH2<=>H2+C2H2              1.600E+15        .000      11944.00
CH2+CH3<=>H+C2H4            4.000E+13        .000           .00
CH2+CH4<=>2CH3              2.460E+06       2.000       8270.00
CH2+CO(+M)<=>CH2CO(+M) 8.100E+11         .500       4510.00
        LOW   /   2.690E+33     -5.110      7095.00/
        TROE/     .5907    275.00    1226.00    5185.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
CH2+HCCO<=>C2H3+CO          3.000E+13        .000           .00
CH2(S)+N2<=>CH2+N2          1.500E+13        .000        600.00
CH2(S)+AR<=>CH2+AR          9.000E+12        .000        600.00
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CH2(S)+O2<=>H+OH+CO        2.800E+13         .000             .00
CH2(S)+O2<=>CO+H2O         1.200E+13         .000             .00
CH2(S)+H2<=>CH3+H          7.000E+13         .000             .00
CH2(S)+H2O(+M)<=>CH3OH(+M) 4.820E+17      -1.160        1145.00
        LOW   /   1.880E+38      -6.360      5040.00/
        TROE/     .6027    208.00    3922.00    10180.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
CH2(S)+H2O<=>CH2+H2O       3.000E+13         .000             .00
CH2(S)+CH3<=>H+C2H4        1.200E+13         .000        -570.00
CH2(S)+CH4<=>2CH3          1.600E+13         .000        -570.00
CH2(S)+CO<=>CH2+CO         9.000E+12         .000             .00
CH2(S)+CO2<=>CH2+CO2       7.000E+12         .000             .00
CH2(S)+CO2<=>CO+CH2O       1.400E+13         .000             .00
CH2(S)+C2H6<=>CH3+C2H5 4.000E+13             .000        -550.00
CH3+O2<=>O+CH3O            3.560E+13         .000       30480.00
CH3+O2<=>OH+CH2O           2.310E+12         .000       20315.00
CH3+H2O2<=>HO2+CH4         2.450E+04        2.470        5180.00
2CH3(+M)<=>C2H6(+M)        6.770E+18       -1.180         654.00
        LOW   /   3.400E+41      -7.030      2762.00/
        TROE/     .6190    73.20    1180.00    9999.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
2CH3<=>H+C2H5              6.840E+12          .100       10600.00
CH3+HCO<=>CH4+CO           2.648E+13         .000             .00
CH3+CH2O<=>HCO+CH4         3.320E+03        2.810        5860.00
CH3+CH3OH<=>CH2OH+CH4    3.000E+07        1.500        9940.00
CH3+CH3OH<=>CH3O+CH4       1.000E+07        1.500        9940.00
CH3+C2H4<=>C2H3+CH4        2.270E+05        2.000        9200.00
CH3+C2H6<=>C2H5+CH4        6.140E+06        1.740       10450.00
HCO+H2O<=>H+CO+H2O         1.500E+18       -1.000       17000.00
HCO+M<=>H+CO+M             1.870E+17       -1.000       17000.00
H2/2.00/ H2O/ .00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/
HCO+O2<=>HO2+CO            13.45E+12         .000         400.00
CH2OH+O2<=>HO2+CH2O        1.800E+13         .000         900.00
CH3O+O2<=>HO2+CH2O         4.280E-13        7.600       -3530.00
C2H+O2<=>HCO+CO            1.000E+13         .000        -755.00
C2H+H2<=>H+C2H2            5.680E+10        0.900        1993.00
C2H3+O2<=>HCO+CH2O         4.580E+16       -1.390        1015.00
C2H4(+M)<=>H2+C2H2(+M) 8.000E+12             .440       86770.00
        LOW   /   1.580E+51      -9.300     97800.00/
        TROE/     .7345    180.00    1035.00    5417.00 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
C2H5+O2<=>HO2+C2H4         8.400E+11         .000        3875.00
HCCO+O2<=>OH+2CO           3.200E+12         .000         854.00
2HCCO<=>2CO+C2H2           1.000E+13         .000             .00
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O+CH3=>H+H2+CO                3.370E+13         .000             .00
O+C2H4<=>H+CH2CHO             6.700E+06        1.830          220.00
O+C2H5<=>H+CH3CHO             1.096E+14         .000             .00
OH+HO2<=>O2+H2O               0.500E+16         .000       17330.00
   DUPLICATE
OH+CH3=>H2+CH2O               8.000E+09         .500       -1755.00
CH+H2(+M)<=>CH3(+M)           1.970E+12         .430        -370.00
     LOW/ 4.820E+25    -2.80    590.0 /
     TROE/ .578    122.0    2535.0    9365.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
CH2+O2=>2H+CO2                5.800E+12         .000        1500.00
CH2+O2<=>O+CH2O               2.400E+12         .000        1500.00
CH2+CH2=>2H+C2H2              2.000E+14         .000       10989.00
CH2(S)+H2O=>H2+CH2O           6.820E+10         .250        -935.00
C2H3+O2<=>O+CH2CHO            3.030E+11         .290          11.00
C2H3+O2<=>HO2+C2H2            1.337E+06        1.610        -384.00
O+CH3CHO<=>OH+CH2CHO          2.920E+12         .000        1808.00
O+CH3CHO=>OH+CH3+CO           2.920E+12         .000        1808.00
O2+CH3CHO=>HO2+CH3+CO         3.010E+13         .000       39150.00
H+CH3CHO<=>CH2CHO+H2          2.050E+09        1.160        2405.00
H+CH3CHO=>CH3+H2+CO           2.050E+09        1.160        2405.00
OH+CH3CHO=>CH3+H2O+CO         2.343E+10        0.730       -1113.00
HO2+CH3CHO=>CH3+H2O2+CO       3.010E+12         .000       11923.00
CH3+CH3CHO=>CH3+CH4+CO        2.720E+06        1.770        5920.00
H+CH2CO(+M)<=>CH2CHO(+M) 4.865E+11        0.422       -1755.00
       LOW/ 1.012E+42    -8.63    3854.0/
       TROE/ 0.465    201.0    1773.0    5333.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
O+CH2CHO=>H+CH2+CO2           1.500E+14         .000             .00
O2+CH2CHO=>OH+CO+CH2O         1.810E+10         .000             .00
O2+CH2CHO=>OH+2HCO            2.350E+10         .000             .00
H+CH2CHO<=>CH3+HCO            2.200E+13         .000             .00
H+CH2CHO<=>CH2CO+H2           1.100E+13         .000             .00
OH+CH2CHO<=>H2O+CH2CO         1.200E+13         .000             .00
OH+CH2CHO<=>HCO+CH2OH         3.010E+13         .000             .00
O+C3H8<=>OH+C3H7              1.930E+05        2.680        3716.00
H+C3H8<=>C3H7+H2              1.320E+06        2.540        6756.00
OH+C3H8<=>C3H7+H2O            3.160E+07        1.800         934.00
C3H7+H2O2<=>HO2+C3H8          3.780E+02        2.720        1500.00
CH3+C3H8<=>C3H7+CH4           0.903E+00        3.650        7154.00
CH3+C2H4(+M)<=>C3H7(+M)       2.550E+06        1.600        5700.00
          LOW/ 3.00E+63    -14.6    18170./
          TROE/ .1894    277.0    8748.0    7891.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
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O+C3H7<=>C2H5+CH2O
9.640E+13          .000             .00
H+C3H7(+M)<=>C3H8(+M)
3.613E+13          .000             .00
          LOW/ 4.420E+61    -13.545    11357.0/
          TROE/ .315    369.0    3285.0    6667.0 /
H2/2.00/ H2O/6.00/ CH4/2.00/ CO/1.50/ CO2/2.00/ C2H6/3.00/ AR/ .70/
H+C3H7<=>CH3+C2H5                4.060E+06        2.190        890.00
OH+C3H7<=>C2H5+CH2OH          2.410E+13          .000             .00
HO2+C3H7<=>O2+C3H8               2.550E+10        0.255      -943.00
HO2+C3H7=>OH+C2H5+CH2O      2.410E+13          .000             .00
CH3+C3H7<=>2C2H5                 1.927E+13       -0.320            .00
C3H4+O<=>C2H4+CO                 2.000e+07        1.800      1000.00
CH3+C2H2<=>C3H4+H                2.560e+09        1.100     13643.88
C3H4+O<=>HCCO+CH3                7.300e+12        0.000      2250.00
C3H3+H(+M)<=>C3H4(+M)        3.000e+13        0.000           0.00
        LOW    /    9.000e+15        1.000           0.00 /
        TROE/          0.5        1e+30          1e-30              /
C3H3+HO2<=>C3H4+O2               2.500e+12        0.000           0.00
C3H4+OH<=>C3H3+H2O               5.300e+06        2.000      2000.00
C3H3+O2<=>CH2CO+HCO           3.000e+10        0.000      2868.07
C3H4+H(+M)<=>C3H5(+M)        4.000e+13        0.000           0.00
        LOW    /    3.000e+24      -2.000           0.00 /
        TROE/          0.8        1e+30          1e-30              /
C3H5+H<=>C3H4+H2                 1.800e+13        0.000           0.00
C3H5+O2<=>C3H4+HO2               4.990e+15       -1.400     22428.06
C3H5+CH3<=>C3H4+CH4              3.000e+12       -0.320      -130.98
C2H2+CH3(+M)<=>C3H5(+M)    6.000e+08        0.000           0.00
        LOW    /    2.000e+09        1.000           0.00 /
        TROE/          0.5        1e+30          1e-30              /
C3H5+OH<=>C3H4+H2O               6.000e+12        0.000           0.00
C3H3+HCO<=>C3H4+CO               2.500e+13        0.000           0.00
C3H3+HO2<=>OH+CO+C2H3        8.000e+11        0.000           0.00
C3H4+O2<=>CH3+HCO+CO         4.000e+14        0.000     41826.00
C3H6+O<=>C2H5+HCO                3.500e+07        1.650      -972.75
C3H6+OH<=>C3H5+H2O               3.100e+06        2.000      -298.28
C3H6+O<=>CH2CO+CH3+H         1.200e+08        1.650       327.44
C3H6+H<=>C3H5+H2                 1.700e+05        2.500      2492.83
C3H5+H(+M)<=>C3H6(+M)        2.000e+14        0.000           0.00
AR/0.70/ H2/2.00/ H2O/6.00/ CO/1.50/ CO2/2.00/ CH4/2.00/ C2H6/3.00/
        LOW    /    1.330e+60    -12.000      5967.97 /
        TROE/        0.02          1097           1097           6860 /
C3H5+HO2<=>C3H6+O2               2.660e+12        0.000           0.00
C3H5+HO2<=>OH+C2H3+CH2O    3.000e+12        0.000           0.00
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C2H3+CH3(+M)<=>C3H6(+M)    2.500e+13        0.000           0.00
AR/0.70/ H2/2.00/ H2O/6.00/ CO/1.50/ CO2/2.00/ CH4/2.00/ C2H6/3.00/
        LOW    /    4.270e+58    -11.940      9770.55 /
        TROE/      0.175          1341          6e+04 1.014e+04 /
C3H8(+M)<=>CH3+C2H5(+M)    1.100e+17        0.000    84392.93
        LOW    /    5.830e+17        0.000    62978.01 /
        TROE/        0.76    1.9e+03              38              /
C4H10(+M)<=>2C2H5(+M)       2.720e+15        0.000      75609.94
        LOW    /    4.720e+18        0.000    49580.07 /
        TROE/ 0.72    1500.00      1.0000E-10 1.0000E+10 /
C4H10+O2<=>PC4H9+HO2         6.000e+13        0.000    52340.11
C4H10+O2<=>SC4H9+HO2         4.000e+13        0.000    49799.95
C4H10+HO2<=>PC4H9+H2O2       4.080e+01        3.590    17159.89
C4H10+HO2<=>SC4H9+H2O2       1.264e+02        3.370    13719.89
C4H10+O<=>PC4H9+OH           1.130E+14        0.000     7850.00
C4H10+O<=>SC4H9+OH           5.620E+13        0.000     5200.00
C4H10+OH<=>PC4H9+H2O         1.054e+10        0.970     1586.04
C4H10+OH<=>SC4H9+H2O         9.340e+07        1.610      -34.89
C4H10+H<=>H2+PC4H9           2.8000E+06      2.540     6965.4
C4H10+H<=>H2+SC4H9           1.6900E+06      2.400     4493.0
PC4H9<=>C2H5+C2H4            3.504e+12        0.463    29469.89
SC4H9<=>C3H6+CH3             4.803e+10        1.044    30349.90
C4H8<=>C3H5+CH3              1.000e+16        0.000    72896.75
C4H8+H<=>H2+C2H3+C2H4        6.600e+05        2.540     6763.86
SC4H9+O2<=>SC4H9O2           7.500e+12        0.000          0.00
SC4H9O2<=>C4H8+HO2           5.075E+42      -9.410    41490.00
PC4H9+O2<=>C4H8+HO2          8.370e-01        3.590    12000.00
END
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