Example No. 5: Add Descending Grid Points

If the maximum number of grid points is greater than the number of grid points and the distribution is negative at an interpolated point, the code will automatically add grid points (up to the maximum), at those points where the distribution is negative.

Example No. 6: Condensation and Restart

The effect of source and removal mechanisms on the first moment of the distribution is not computed if condensation is included in the G.D.E.

Example No. 7: Input Errors to DC GDE

Notice that the code automatically resets the last multiplet number to twice the number of discrete sizes. The error messages should be self-explanatory.

Example No. 8: DC GDE with Source

Notice that "STEADY STATE" is printed before the output for the discrete regime if the steady state approximation is used to calculate the cluster concentrations.

Example No. 9: DC GDE and Steady State

If the spline interpolation method is changed during the simulation, the code will repeat the printout using the new interpolation method.

```
          10        20        30        40        50
          |         |         |         |         |
 9
     EXAMPLE NO. 1 | INPUT ERRORS        10.       |1.        0.        0.
  7 6 0 2 4 0 4      0       16789112546             |0010000000
 0.         5.        2.        4.
 EXAMPLE NO. 2  SIMPLE COAGULATION          4.19E-21  2.88E-10   1.00E-2  1.00E-20
 2530 0 0 3 0 0       0       10000001000            0000000000
 0.0        300.      600.
 EXAMPLE NO. 3  COAGULATION AND SOURCES     4.19E-21  2.88E-10   1.00E-2  1.00E-20
 2530 0 0 3 0 0       0       02000001000            0000000000
 0.0        300.      600.      900.
 EXAMPLE NO. 4  ADD GRID POINTS             4.19E-21  5.00E-10   1.00E-3  1.00E-20
 2025 0 0 3 0 0       4       02200001000            0000000000
 0.0        120.      300.
   7.00E-21  1.00E-20  2.00E-20  5.00E-20
 EXAMPLE NO. 5 ADD DESCENDING GRID POINTS  5.00E-21  1.00E-10  .002      .00001
 1022 0 0 1 0 0      -2       20000001000            0000000000
 0.0        300.      600.      900.
   6.00E-11  3.00E-11
 EXAMPLE NO. 6  CONDENSATION AND RESTART     1.E-18    1.E-12  .003        1.E-20
 2530 0 0 3 0 0       0       10100101000            0100000000
 1.         100.      200.
   1.169E23  4.951E22  2.096E22  1.578E22  2.687E21  6.668E20  1.655E20  7.023E19
   4.074E19  2.363E19  1.092E19  4.397E18  1.770E18  5.484E17  1.462E17  3.898E16
   1.129E16  3.437E15  1.046E15  2.904E14  6.743E13  1.886E13  6.986E12  1.814E12
   3.797E11
 EXAMPLE NO. 7   INPUT ERRORS TO DC GDE  1.         10.        .001          1.E-20
 1225 1 2 1 1 9       4       20000103000            0020000000
 0.         2.        5.        90.       70.
    19    4
 100.       75.       50.       40.       30.
 2.         3.        5.        4.
 EXAMPLE NO. 8  DC GDE WITH SOURCE         6.54E-23  5.24E-13   5.00E-3  1.00E-25
 2530 5 2 4 0-1       2       11121001100            0100000000
 0.0        .1        1.        10.       300.      900.      1200.     1800.
    8   10
   1.00E+07  3.00E+06  1.00E+06  3.00E+05  1.00E+05
   .900E-21  .140E-20
 EXAMPLE NO. 9   DC GDE AND STEADY STATE   6.54E-23  5.24E-13   1.00E-2  1.00E-22
 2530 5 2 6 5 4      -3       12222001100            1100000000
 0.0        .05       .5        2.        5.        10.       30.       60.
    8   10
   1.00E+07  3.00E+06  1.00E+06  3.00E+05  1.00E+05
   .200E-12  .730E-13  .270E-13
```

NUMBER OF CASES = 9

EXAMPLE NO. 1 INPUT ERRORS

SMALLEST PARTICLE SIZE	.1000E+02	LARGEST PARTICLE SIZE	.1000E+01
RELATIVE INTEGRATION ERROR	.1000E-02	ABSOLUTE INTEGRATION ERROR	0.
TOTAL NUMBER OF GRID POINTS	10	MAXIMUM NUMBER OF GRID POINTS	10
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	4	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	0
NUMBER OF INTERPOLATING POINTS	1	NUMBER OF CONTINUOUS SOURCE TERMS	6
NUMBER OF CONTINUOUS REMOVAL TERMS	7	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	1
INITIAL SPLINE INTERPOLATION METHOD NUMBER	1	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	2
SPLINE NUMBER FOR SWITCHED METHOD	5	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	4
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	6	USER SUPPLIED PARAMETER SWITCHES	0 0 1 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.5000E+01	3	.2000E+01	4	.4000E+01				

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.1000E+02	2	.7743E+01	3	.5995E+01	4	.4642E+01	5	.3594E+01	6	.2783E+01
7	.2154E+01	8	.1668E+01	9	.1292E+01	10	.1000E+01				

---SMALLEST SIZE MUST BE LESS THAN LARGEST SIZE

---OUTPUT TIMES MUST BE NON-NEGATIVE AND IN ASCENDING ORDER

---NUMBER OF CONTINUOUS SOURCES IS GREATER THAN 3

---NUMBER OF CONTINUOUS REMOVALS IS GREATER THAN 3

---WHETHER TO CALL SETUP HAS NOT BEEN PROPERLY SPECIFIED

---IF COAGULATION COEFFICIENT IS TIME DEPENDENT HAS NOT BEEN PROPERLY SPECIFIED

---GROWTH RATE IS NEGATIVE

---NUMERICAL DERIVATIVE OF GROWTH RATE FOR SMALLEST PARTICLE AT INITIAL TIME DOES NOT MATCH GIVEN DERIVATIVE
NUMERICAL AND GIVEN DERIVATIVES RESPECTIVELY ARE -.73226E-15 .36613E-15

---INITIAL DISTRIBUTION NEGATIVE FOR A PARTICLE SIZE= .1000E+02

---BETA ROUTINE IS NOT SYMMETRIC

---BETA ROUTINE IS NOT POSITIVE

EXAMPLE NO. 2 SIMPLE COAGULATION

SMALLEST PARTICLE SIZE	.4190E-20	LARGEST PARTICLE SIZE	.2888E-09
RELATIVE INTEGRATION ERROR	.1000E-01	ABSOLUTE INTEGRATION ERROR	.1000E-19
TOTAL NUMBER OF GRID POINTS	25	MAXIMUM NUMBER OF GRID POINTS	30
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	3	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	0
NUMBER OF INTERPOLATING POINTS	1	NUMBER OF CONTINUOUS SOURCE TERMS	0
NUMBER OF CONTINUOUS REMOVAL TERMS	0	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 0 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.3000E+03	3	.6000E+03						

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.4190E-20	2	.1185E-19	3	.3352E-19	4	.9481E-19	5	.2682E-18	6	.7585E-18
7	.2145E-17	8	.6068E-17	9	.1716E-16	10	.4855E-16	11	.1373E-15	12	.3884E-15
13	.1099E-14	14	.3107E-14	15	.8788E-14	16	.2486E-13	17	.7031E-13	18	.1989E-12
19	.5625E-12	20	.1591E-11	21	.4500E-11	22	.1273E-10	23	.3600E-10	24	.1018E-09
25	.2880E-09										

NO DATA INPUT ERRORS FOUND

TIME =0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.6791E+03	.8536E-10	.2846E-17
2	.1185E-19	.2829E-06	.4061E+04	.1018E-08	.4801E-16
3	.3352E-19	.4000E-06	.1706E+05	.8578E-08	.5719E-15
4	.9481E-19	.5657E-06	.5078E+05	.5106E-07	.4814E-14
5	.2682E-18	.8001E-06	.1070E+06	.2151E-06	.2869E-13
6	.7586E-18	.1131E-05	.1602E+06	.6442E-06	.1215E-12
7	.2145E-17	.1600E-05	.1727E+06	.1389E-05	.3706E-12
8	.6068E-17	.2263E-05	.1390E+06	.2237E-05	.8436E-12
9	.1716E-16	.3200E-05	.9190E+05	.2957E-05	.1577E-11
10	.4855E-16	.4526E-05	.5970E+05	.3842E-05	.2898E-11
11	.1373E-15	.6401E-05	.4306E+05	.5542E-05	.5912E-11
12	.3884E-15	.9052E-05	.3153E+05	.8117E-05	.1225E-10
13	.1099E-14	.1280E-04	.2049E+05	.1055E-04	.2251E-10
14	.3107E-14	.1810E-04	.1112E+05	.1145E-04	.3455E-10
15	.8788E-14	.2560E-04	.4950E+04	.1020E-04	.4351E-10
16	.2486E-13	.3621E-04	.1803E+04	.7428E-05	.4483E-10
17	.7031E-13	.5121E-04	.5398E+03	.4447E-05	.3795E-10
18	.1989E-12	.7242E-04	.1358E+03	.2238E-05	.2701E-10
19	.5625E-12	.1024E-03	.3186E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9196E+01	.6060E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1998E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9073E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3664E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

INTERPOLATED DISTRIBUTION

1	.7047E-20	.2379E-06	.1801E+04	.3202E-09	.1269E-16
2	.1993E-19	.3364E-06	.8633E+04	.3069E-08	.1721E-15
3	.5638E-19	.4757E-06	.3080E+05	.2190E-07	.1736E-14
4	.1595E-18	.6728E-06	.7708E+05	.1096E-06	.1229E-13
5	.4510E-18	.9515E-06	.1365E+06	.3882E-06	.6156E-13
6	.1276E-17	.1346E-05	.1728E+06	.9831E-06	.2205E-12
7	.3608E-17	.1903E-05	.1600E+06	.1820E-05	.5773E-12
8	.1021E-16	.2691E-05	.1149E+06	.2614E-05	.1172E-11
9	.2887E-16	.3806E-05	.7341E+05	.3341E-05	.2119E-11
10	.8165E-16	.5382E-05	.5008E+05	.4558E-05	.4089E-11
11	.2309E-15	.7612E-05	.3711E+05	.6755E-05	.8570E-11
12	.6532E-15	.1076E-04	.2594E+05	.9443E-05	.1694E-10
13	.1847E-14	.1522E-04	.1547E+05	.1127E-04	.2859E-10
14	.5225E-14	.2153E-04	.7613E+04	.1109E-04	.3978E-10
15	.1478E-13	.3045E-04	.3063E+04	.8922E-05	.4528E-10
16	.4180E-13	.4306E-04	.1009E+04	.5876E-05	.4217E-10
17	.1182E-12	.6090E-04	.2746E+03	.3199E-05	.3246E-10
18	.3344E-12	.8612E-04	.6497E+02	.1514E-05	.2173E-10
19	.9460E-12	.1218E-03	.1615E+02	.7525E-06	.1527E-10
20	.2676E-11	.1722E-03	.6787E+01	.5394E-06	.1548E-10
21	.7568E-11	.2436E-03	.2825E+01	.5267E-06	.2138E-10
22	.2141E-10	.3445E-03	.1373E+01	.5118E-06	.2939E-10
23	.6054E-10	.4872E-03	.5728E+00	.4271E-06	.3468E-10
24	.1712E-09	.6890E-03	.2068E+00	.3084E-06	.3641E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.4312E-15	.2968E-06	.1379E+06	.1128E-04	.5948E-10

TIME = .3000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.3581E+02	.4500E-11	.1500E-18
2	.1185E-19	.2829E-06	.7427E+03	.1867E-09	.8802E-17
3	.3352E-19	.4000E-06	.6425E+04	.3230E-08	.2164E-15
4	.9481E-19	.5657E-06	.2872E+05	.2888E-07	.2723E-14
5	.2682E-18	.8001E-06	.7619E+05	.1532E-06	.2043E-13
6	.7585E-18	.1131E-05	.1305E+06	.5247E-06	.9895E-13
7	.2145E-17	.1600E-05	.1532E+06	.1232E-05	.3287E-12
8	.6068E-17	.2263E-05	.1308E+06	.2104E-05	.7936E-12
9	.1716E-16	.3200E-05	.8964E+05	.2884E-05	.1539E-11
10	.4856E-16	.4526E-05	.5914E+05	.3806E-05	.2871E-11
11	.1373E-15	.6401E-05	.4290E+05	.5522E-05	.5891E-11
12	.3884E-15	.9052E-05	.3152E+05	.8114E-05	.1224E-10
13	.1099E-14	.1280E-04	.2052E+05	.1057E-04	.2254E-10
14	.3107E-14	.1810E-04	.1114E+05	.1147E-04	.3461E-10
15	.8788E-14	.2560E-04	.4957E+04	.1021E-04	.4357E-10
16	.2486E-13	.3621E-04	.1805E+04	.7435E-05	.4487E-10
17	.7031E-13	.5121E-04	.5401E+03	.4449E-05	.3797E-10
18	.1989E-12	.7242E-04	.1359E+03	.2239E-05	.2702E-10
19	.5625E-12	.1024E-03	.3181E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9196E+01	.6061E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1996E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9073E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3664E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

INTERPOLATED DISTRIBUTION

1	.7047E-20	.2379E-06	.1790E+03	.3181E-10	.1261E-17
2	.1993E-19	.3364E-06	.2349E+04	.8350E-09	.4682E-16
3	.5638E-19	.4757E-06	.1463E+05	.1040E-07	.8246E-15
4	.1595E-18	.6728E-06	.4981E+05	.7083E-07	.7942E-14
5	.4510E-18	.9515E-06	.1049E+06	.2983E-06	.4731E-13
6	.1276E-17	.1346E-05	.1475E+06	.8389E-06	.1881E-12
7	.3608E-17	.1903E-05	.1465E+06	.1667E-05	.5287E-12
8	.1021E-16	.2691E-05	.1103E+06	.2511E-05	.1126E-11
9	.2887E-16	.3806E-05	.7233E+05	.3292E-05	.2088E-11
10	.8165E-16	.5382E-05	.4979E+05	.4531E-05	.4065E-11
11	.2309E-15	.7612E-05	.3704E+05	.6743E-05	.8555E-11
12	.6532E-15	.1076E-04	.2596E+05	.9450E-05	.1695E-10
13	.1847E-14	.1522E-04	.1550E+05	.1129E-04	.2863E-10
14	.5225E-14	.2153E-04	.7625E+04	.1110E-04	.3984E-10
15	.1478E-13	.3045E-04	.3067E+04	.8932E-05	.4533E-10
16	.4180E-13	.4306E-04	.1089E+04	.5888E-05	.4220E-10
17	.1182E-12	.6090E-04	.2746E+03	.3200E-05	.3248E-10
18	.3344E-12	.8612E-04	.6498E+02	.1514E-05	.2173E-10
19	.9460E-12	.1218E-03	.1615E+02	.7526E-06	.1528E-10
20	.2676E-11	.1722E-03	.5788E+01	.5394E-06	.1549E-10
21	.7568E-11	.2436E-03	.2825E+01	.5267E-06	.2138E-10
22	.2141E-10	.3445E-03	.1373E+01	.5118E-06	.2939E-10
23	.6054E-10	.4872E-03	.6728E+00	.4271E-06	.3468E-10
24	.1712E-09	.6890E-03	.2068E+00	.3084E-06	.3541E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.5010E-16	.3276E-05	.1187E+06	.1120E-04	.5946E-10

TIME = .6000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.1895E+01	.2381E-12	.7939E-20
2	.1185E-19	.2829E-06	.1398E+03	.3514E-10	.1657E-17
3	.3352E-19	.4000E-06	.2464E+04	.1239E-08	.8261E-16
4	.9481E-19	.5657E-06	.1646E+05	.1655E-07	.1561E-14
5	.2682E-18	.8001E-06	.5480E+05	.1102E-06	.1470E-13
6	.7585E-18	.1131E-05	.1069E+06	.4298E-06	.8106E-13
7	.2145E-17	.1600E-05	.1361E+06	.1095E-05	.2920E-12
8	.6068E-17	.2263E-05	.1229E+06	.1977E-05	.7458E-12
9	.1716E-16	.3200E-05	.8731E+05	.2809E-05	.1499E-11
10	.4855E-16	.4526E-05	.5855E+05	.3768E-05	.2842E-11
11	.1373E-15	.6401E-05	.4273E+05	.5500E-05	.5868E-11
12	.3884E-15	.9052E-05	.3150E+05	.8109E-05	.1223E-10
13	.1099E-14	.1280E-04	.2054E+05	.1058E-04	.2257E-10
14	.3107E-14	.1810E-04	.1116E+05	.1149E-04	.3466E-10
15	.8788E-14	.2560E-04	.4964E+04	.1022E-04	.4362E-10
16	.2486E-13	.3621E-04	.1807E+04	.7441E-05	.4491E-10
17	.7031E-13	.5121E-04	.5403E+03	.4451E-05	.3799E-10
18	.1989E-12	.7242E-04	.1359E+03	.2239E-05	.2703E-10
19	.5625E-12	.1024E-03	.3181E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9197E+01	.6061E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1996E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9973E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3665E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

INTERPOLATED DISTRIBUTION

1	.7047E-20	.2379E-06	.2319E+02	.4123E-11	.1634E-18
2	.1993E-19	.3364E-06	.6250E+03	.2222E-09	.1246E-16
3	.5638E-19	.4757E-06	.7022E+04	.4993E-08	.3959E-15
4	.1595E-18	.6728E-06	.3257E+05	.4632E-07	.5194E-14
5	.4510E-18	.9515E-06	.8124E+05	.2311E-06	.3664E-13
6	.1276E-17	.1346E-05	.1263E+06	.7186E-06	.1612E-12
7	.3608E-17	.1903E-05	.1342E+06	.1527E-05	.4842E-12
8	.1021E-16	.2691E-05	.1058E+06	.2408E-05	.1080E-11
9	.2887E-16	.3806E-05	.7118E+05	.3239E-05	.2055E-11
10	.8165E-16	.5382E-05	.4947E+05	.4502E-05	.4039E-11
11	.2309E-15	.7612E-05	.3697E+05	.6729E-05	.8537E-11
12	.6532E-15	.1076E-04	.2597E+05	.9454E-05	.1696E-10
13	.1847E-14	.1522E-04	.1552E+05	.1130E-04	.2868E-10
14	.5225E-14	.2153E-04	.7636E+04	.1112E-04	.3990E-10
15	.1478E-13	.3045E-04	.3070E+04	.8942E-05	.4538E-10
16	.4180E-13	.4306E-04	.1010E+04	.5883E-05	.4222E-10
17	.1182E-12	.6090E-04	.2747E+03	.3201E-05	.3249E-10
18	.3344E-12	.8612E-04	.6500E+02	.1514E-05	.2174E-10
19	.9460E-12	.1218E-03	.1615E+02	.7526E-06	.1528E-10
20	.2676E-11	.1722E-03	.5788E+01	.5394E-06	.1549E-10
21	.7568E-11	.2436E-03	.2826E+01	.5267E-06	.2138E-10
22	.2141E-10	.3445E-03	.1373E+01	.5118E-06	.2939E-10
23	.6064E-10	.4872E-03	.5728E+00	.4271E-06	.3468E-10
24	.1712E-09	.6890E-03	.2068E+00	.3084E-06	.3541E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.5653E-15	.3542E-05	.1062E+06	.1112E-04	.5946E-10

EXAMPLE NO. 3 COAGULATION AND SOURCES

SMALLEST PARTICLE SIZE	.4190E-20	LARGEST PARTICLE SIZE	.2880E-09
RELATIVE INTEGRATION ERROR	.1000E-01	ABSOLUTE INTEGRATION ERROR	.1000E-19
TOTAL NUMBER OF GRID POINTS	25	MAXIMUM NUMBER OF GRID POINTS	30
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	3	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	0
NUMBER OF INTERPOLATING POINTS	0	NUMBER OF CONTINUOUS SOURCE TERMS	2
NUMBER OF CONTINUOUS REMOVAL TERMS	0	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 0 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.3000E+03	3	.6000E+03						

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.4190E-20	2	.1185E-19	3	.3352E-19	4	.9481E-19	5	.2682E-18	6	.7585E-18
7	.2145E-17	8	.6068E-17	9	.1716E-16	10	.4855E-16	11	.1373E-15	12	.3884E-15
13	.1099E-14	14	.3107E-14	15	.8788E-14	16	.2486E-13	17	.7031E-13	18	.1989E-12
19	.5625E-12	20	.1591E-11	21	.4500E-11	22	.1273E-10	23	.3600E-10	24	.1018E-09
25	.2880E-09										

NO DATA INPUT ERRORS FOUND

TIME =0. SECONDS

NO.	PARTICLE VOLUME U CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.6791E+03	.8536E-10	.2846E-17
2	.1185E-19	.2829E-06	.4051E+04	.1018E-08	.4801E-16
3	.3352E-19	.4000E-06	.1706E+05	.8578E-08	.5719E-15
4	.9481E-19	.5657E-06	.5078E+05	.5106E-07	.4814E-14
5	.2682E-18	.8001E-06	.1070E+06	.2151E-06	.2868E-13
6	.7585E-18	.1131E-05	.1602E+06	.6442E-06	.1215E-12
7	.2145E-17	.1600E-05	.1727E+06	.1389E-05	.3706E-12
8	.6068E-17	.2263E-05	.1390E+06	.2237E-05	.8436E-12
9	.1716E-16	.3200E-05	.9190E+05	.2957E-05	.1577E-11
10	.4855E-16	.4526E-05	.5970E+05	.3842E-05	.2898E-11
11	.1373E-15	.6401E-05	.4306E+05	.5542E-05	.5912E-11
12	.3884E-15	.9052E-05	.3153E+05	.8117E-05	.1225E-10
13	.1099E-14	.1280E-04	.2049E+05	.1055E-04	.2251E-10
14	.3107E-14	.1810E-04	.1112E+05	.1145E-04	.3455E-10
15	.8788E-14	.2560E-04	.4950E+04	.1020E-04	.4351E-10
16	.2486E-13	.3621E-04	.1803E+04	.7428E-05	.4483E-10
17	.7031E-13	.5121E-04	.5398E+03	.4447E-05	.3795E-10
18	.1989E-12	.7242E-04	.1358E+03	.2238E-05	.2701E-10
19	.5625E-12	.1024E-03	.3180E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9196E+01	.6060E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1996E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9873E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3664E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.4312E-15	.2968E-05	.1379E+06	.1128E-04	.5946E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.

.3000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.5280E+02	.6636E-11	.2212E-18
2	.1185E-19	.2829E-06	.1191E+04	.2995E-09	.1412E-16
3	.3352E-19	.4000E-06	.1164E+05	.5853E-08	.3902E-15
4	.9481E-19	.5657E-06	.5491E+05	.5521E-07	.5206E-14
5	.2682E-18	.8001E-06	.1371E+06	.2756E-06	.3675E-13
6	.7585E-18	.1131E-05	.2046E+06	.8229E-06	.1552E-12
7	.2145E-17	.1600E-05	.2150E+06	.1730E-05	.4613E-12
8	.6068E-17	.2263E-05	.1799E+06	.2894E-05	.1092E-11
9	.1716E-16	.3200E-05	.1268E+06	.4053E-05	.2162E-11
10	.4855E-16	.4526E-05	.7986E+05	.5139E-05	.3877E-11
11	.1373E-15	.6401E-05	.5141E+05	.6617E-05	.7059E-11
12	.3884E-15	.9052E-05	.3402E+05	.8757E-05	.1321E-10
13	.1098E-14	.1280E-04	.2105E+05	.1084E-04	.2312E-10
14	.3107E-14	.1810E-04	.1122E+05	.1155E-04	.3486E-10
15	.8788E-14	.2560E-04	.4966E+04	.1023E-04	.4364E-10
16	.2486E-13	.3621E-04	.1886E+04	.7438E-05	.4489E-10
17	.7031E-13	.5121E-04	.5401E+03	.4449E-05	.3797E-10
18	.1989E-12	.7242E-04	.1359E+03	.2239E-05	.2702E-10
19	.5625E-12	.1024E-03	.3181E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9196E+01	.6061E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1896E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9073E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3664E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.3526E-15	.2853E-05	.1709E+06	.1216E-04	.6024E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.2576E-13
2	.7579E-12

TIME = .6000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.2311E+02	.2904E-11	.9682E-19
2	.1185E-19	.2829E-06	.6556E+03	.1648E-09	.7770E-17
3	.3352E-19	.4000E-06	.9005E+04	.4527E-08	.3018E-15
4	.9481E-19	.5657E-06	.5401E+05	.5431E-07	.5121E-14
5	.2682E-18	.8001E-06	.1517E+06	.3050E-06	.4067E-13
6	.7585E-18	.1131E-05	.2334E+06	.9388E-06	.1770E-12
7	.2145E-17	.1600E-05	.2476E+06	.1992E-05	.5313E-12
8	.6068E-17	.2263E-05	.2158E+06	.3471E-05	.1309E-11
9	.1716E-16	.3200E-05	.1585E+06	.5099E-05	.2720E-11
10	.4855E-16	.4526E-05	.9996E+05	.6433E-05	.4853E-11
11	.1373E-15	.6401E-05	.5989E+05	.7708E-05	.8223E-11
12	.3884E-15	.9052E-05	.3657E+05	.9414E-05	.1420E-10
13	.1099E-14	.1280E-04	.2162E+05	.1113E-04	.2375E-10
14	.3107E-14	.1810E-04	.1132E+05	.1166E-04	.3518E-10
15	.8788E-14	.2560E-04	.4983E+04	.1026E-04	.4379E-10
16	.2486E-13	.3621E-04	.1808E+04	.7449E-05	.4495E-10
17	.7031E-13	.5121E-04	.5405E+03	.4452E-05	.3800E-10
18	.1989E-12	.7242E-04	.1359E+03	.2239E-05	.2703E-10
19	.5625E-12	.1024E-03	.3181E+02	.1048E-05	.1789E-10
20	.1591E-11	.1448E-03	.9197E+01	.6061E-06	.1463E-10
21	.4500E-11	.2048E-03	.3986E+01	.5254E-06	.1794E-10
22	.1273E-10	.2897E-03	.1996E+01	.5263E-06	.2541E-10
23	.3600E-10	.4097E-03	.9073E+00	.4784E-06	.3266E-10
24	.1018E-09	.5794E-03	.3475E+00	.3665E-06	.3538E-10
25	.2880E-09	.8193E-03	.1104E+00	.2328E-06	.3179E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.3101E-15	.2828E-05	.1968E+06	.1299E-04	.6103E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.5152E-13
2	.1516E-11

EXAMPLE NO. 4 ADD GRID POINTS

SMALLEST PARTICLE SIZE	.4190E-20	LARGEST PARTICLE SIZE	.5000E-09
RELATIVE INTEGRATION ERROR	.1000E-02	ABSOLUTE INTEGRATION ERROR	.1000E-19
TOTAL NUMBER OF GRID POINTS	20	MAXIMUM NUMBER OF GRID POINTS	25
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	3	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	4
NUMBER OF INTERPOLATING POINTS	0	NUMBER OF CONTINUOUS SOURCE TERMS	2
NUMBER OF CONTINUOUS REMOVAL TERMS	2	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 0 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.1200E+03	3	.3000E+03						

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.4190E-20	2	.7000E-20	3	.1000E-19	4	.2000E-19	5	.5000E-19	6	.2321E-18
7	.1077E-17	8	.5000E-17	9	.2321E-16	10	.1077E-15	11	.5000E-15	12	.2321E-14
13	.1077E-13	14	.5000E-13	15	.2321E-12	16	.1077E-11	17	.5000E-11	18	.2321E-10
19	.1077E-09	20	.5000E-09								

NO DATA INPUT ERRORS FOUND

TIME =0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.6791E+03	.8536E-10	.2846E-17
2	.7000E-20	.2373E-06	.1713E+04	.3031E-09	.1199E-16
3	.1000E-19	.2673E-06	.3099E+04	.6956E-09	.3099E-16
4	.2000E-19	.3368E-06	.8724E+04	.3109E-08	.1745E-15
5	.5000E-19	.4571E-06	.2704E+05	.1775E-07	.1352E-14
6	.2321E-18	.7625E-06	.9843E+05	.1798E-06	.2284E-13
7	.1077E-17	.1272E-05	.1703E+06	.8653E-06	.1834E-12
8	.5000E-17	.2122E-05	.1475E+06	.2086E-05	.7376E-12
9	.2321E-16	.3539E-05	.8051E+05	.3168E-05	.1869E-11
10	.1077E-15	.5903E-05	.4613E+05	.5051E-05	.4070E-11
11	.5000E-15	.9847E-05	.2881E+05	.8777E-05	.1441E-10
12	.2321E-14	.1643E-04	.1346E+05	.1141E-04	.3124E-10
13	.1077E-13	.2740E-04	.4127E+04	.9735E-05	.4446E-10
14	.5000E-13	.4571E-04	.8186E+03	.5373E-05	.4093E-10
15	.2321E-12	.7625E-04	.1095E+03	.2800E-05	.2541E-10
16	.1077E-11	.1272E-03	.1397E+02	.7098E-06	.1504E-10
17	.5000E-11	.2122E-03	.3713E+01	.5251E-06	.1857E-10
18	.2321E-10	.3539E-03	.1290E+01	.5075E-06	.2994E-10
19	.1077E-09	.5903E-03	.3282E+00	.3593E-06	.3535E-10
20	.5000E-09	.9847E-03	.5561E-01	.1694E-06	.2781E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.4493E-15	.2967E-05	.1380E+06	.1129E-04	.6200E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.
3	0.
4	0.

TIME = .1200E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.2183E+03	.2744E-10	.9148E-18
2	.7000E-20	.2373E-06	.7603E+03	.1345E-09	.5322E-17
3	.1000E-19	.2673E-06	.1657E+04	.3720E-09	.1657E-16
4	.2000E-19	.3368E-06	.6246E+04	.2225E-08	.1249E-15
5	.5000E-19	.4571E-06	.2629E+05	.1660E-07	.1265E-14
6	.2321E-18	.7625E-06	.1111E+06	.2028E-06	.2577E-13
7	.1077E-17	.1272E-05	.1897E+06	.9642E-06	.2044E-12
8	.5000E-17	.2122E-05	.1646E+06	.2328E-05	.8232E-12
9	.2321E-16	.3539E-05	.9277E+05	.3650E-05	.2153E-11
10	.1077E-15	.5903E-05	.5035E+05	.5513E-05	.5424E-11
11	.5000E-15	.9847E-05	.2951E+05	.8991E-05	.1476E-10
12	.2321E-14	.1643E-04	.1353E+05	.1147E-04	.3139E-10
13	.1077E-13	.2740E-04	.4131E+04	.9745E-05	.4450E-10
14	.5000E-13	.4571E-04	.8188E+03	.5374E-05	.4094E-10
15	.2321E-12	.7625E-04	.1895E+03	.2090E-05	.2541E-10
16	.1077E-11	.1272E-03	.1396E+02	.7094E-06	.1504E-10
17	.5000E-11	.2122E-03	.3705E+01	.5239E-06	.1852E-10
18	.2321E-10	.3539E-03	.1276E+01	.5022E-06	.2962E-10
19	.1077E-09	.5903E-03	.3125E+00	.3421E-06	.3366E-10
20	.5000E-09	.9847E-03	.4429E-01	.1349E-06	.2215E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.4035E-15	.2906E-05	.1520E+06	.1164E-04	.6133E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.1030E-13
2	.3032E-12
3	-.9657E-12
4	-.9858E-14

TIME = .3000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.4190E-20	.2000E-06	.5236E+02	.6581E-11	.2194E-18
2	.7000E-20	.2373E-06	.2747E+03	.4861E-10	.1923E-17
3	.1000E-19	.2673E-06	.7609E+03	.1708E-09	.7609E-17
4	.2000E-19	.3368E-06	.4137E+04	.1474E-08	.8273E-16
5	.5000E-19	.4571E-06	.2293E+05	.1505E-07	.1147E-14
6	.2321E-18	.7625E-06	.1249E+06	.2281E-06	.2898E-13
7	.1077E-17	.1272E-05	.2147E+06	.1091E-05	.2312E-12
8	.5000E-17	.2122E-05	.1887E+06	.2668E-05	.9435E-12
9	.2321E-16	.3539E-05	.1109E+06	.4364E-05	.2574E-11
10	.1077E-15	.5903E-05	.5672E+05	.6209E-05	.6110E-11
11	.5000E-15	.9847E-05	.3058E+05	.9316E-05	.1529E-10
12	.2321E-14	.1643E-04	.1363E+05	.1155E-04	.3162E-10
13	.1077E-13	.2740E-04	.4138E+04	.9761E-05	.4457E-10
14	.5000E-13	.4571E-04	.8192E+03	.5377E-05	.4096E-10
15	.2321E-12	.7625E-04	.1095E+03	.2000E-05	.2541E-10
16	.1077E-11	.1272E-03	.1396E+02	.7092E-06	.1503E-10
17	.5000E-11	.2122E-03	.3699E+01	.5230E-06	.1849E-10
18	.2321E-10	.3539E-03	.1267E+01	.4984E-06	.2940E-10
19	.1077E-09	.5903E-03	.3016E+00	.3302E-06	.3249E-10
20	.5000E-09	.9847E-03	.3761E-01	.1146E-06	.1880E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.3578E-15	.2851E-05	.1710E+06	.1215E-04	.6117E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.2576E-13
2	.7579E-12
3	-.1597E-11
4	-.1334E-13

EXAMPLE NO. 5 ADD DESCENDING GRID POINTS

SMALLEST PARTICLE SIZE	.5000E-20	LARGEST PARTICLE SIZE	.1000E-09
RELATIVE INTEGRATION ERROR	.2000E-02	ABSOLUTE INTEGRATION ERROR	.1000E-04
TOTAL NUMBER OF GRID POINTS	10	MAXIMUM NUMBER OF GRID POINTS	22
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	1	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	-2
NUMBER OF INTERPOLATING POINTS	2	NUMBER OF CONTINUOUS SOURCE TERMS	0
NUMBER OF CONTINUOUS REMOVAL TERMS	0	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 0 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.										

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.5000E-20	2	.1247E-18	3	.3110E-17	4	.7755E-16	5	.1934E-14	6	.4824E-13
7	.1203E-11	8	.3000E-10	9	.6000E-10	10	.1000E-09				

NO DATA INPUT ERRORS FOUND

TIME .0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.5000E-20	.2122E-06	.9429E+03	.1333E-09	.4714E-17
2	.1247E-18	.6198E-06	.6389E+05	.7711E-07	.7967E-14
3	.3110E-17	.1811E-05	.1648E+06	.1698E-05	.5124E-12
4	.7755E-16	.5291E-05	.5092E+05	.4479E-05	.3949E-11
5	.1934E-14	.1546E-04	.1505E+05	.1130E-04	.2911E-10
6	.4824E-13	.4516E-04	.8543E+03	.5475E-05	.4121E-10
7	.1203E-11	.1320E-03	.1233E+02	.6742E-06	.1483E-10
8	.3000E-10	.3855E-03	.1054E+01	.4921E-06	.3162E-10
9	.6000E-10	.4857E-03	.5793E+00	.4294E-06	.3476E-10
10	.1000E-09	.5759E-03	.3539E+00	.3687E-06	.3539E-10
			INTERPOLATED DISTRIBUTION		
1	.1461E-19	.3033E-06	.1393E+05	.4025E-08	.2035E-15
2	.4268E-19	.4336E-06	.3291E+05	.1944E-07	.1405E-14
3	.3643E-18	.8861E-06	.1083E+06	.2671E-06	.3944E-13
4	.1064E-17	.1267E-05	.1491E+06	.7516E-06	.1587E-12
5	.9086E-17	.2589E-05	.1414E+06	.2977E-05	.1285E-11
6	.2654E-16	.3701E-05	.9541E+05	.4106E-05	.2533E-11
7	.2266E-15	.7564E-05	.2637E+05	.4739E-05	.5974E-11
8	.6620E-15	.1081E-04	.1765E+05	.6484E-05	.1168E-10
9	.5651E-14	.2210E-04	.1085E+05	.1664E-04	.6130E-10
10	.1651E-13	.3159E-04	.5346E+04	.1676E-04	.8825E-10
11	.1409E-12	.6457E-04	-.9277E+03	-.1215E-04	-.1307E-09
12	.4117E-12	.9230E-04	-.7532E+03	-.2016E-04	-.3101E-09
13	.3515E-11	.1886E-03	.2924E+03	.3269E-04	.1028E-08
14	.1027E-10	.2697E-03	.1660E+03	.3792E-04	.1704E-08
15	.3780E-10	.4164E-03	-.5660E+01	-.3083E-05	-.2139E-09
16	.4762E-10	.4497E-03	-.3633E+01	-.2308E-05	-.1730E-09
17	.7114E-10	.5141E-03	.1823E+01	.1514E-05	.1297E-09
18	.8434E-10	.5441E-03	.1484E+01	.1380E-05	.1252E-09

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.3037E-14	.2982E-05	.1392E+06	.1821E-04	.4227E-09

*** CURVE FIT NEGATIVE AT FOLLOWING POINTS

1	.1409E-12
2	.4117E-12
3	.3780E-10
4	.4762E-10

TIME STEP WILL BE RETRIED WITH THE ADDITION OF THE FIRST 4 OF THE ABOVE POINTS IN PARTICLE SIZE

TIME =0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.5000E-20	.2122E-06	.9429E+03	.1333E-09	.4714E-17
2	.1247E-18	.6198E-06	.6389E+05	.7711E-07	.7967E-14
3	.3110E-17	.1811E-05	.1648E+06	.1698E-05	.5124E-12
4	.7756E-16	.5291E-05	.5092E+05	.4479E-05	.3949E-11
5	.1934E-14	.1546E-04	.1505E+05	.1130E-04	.2911E-10
6	.4824E-13	.4516E-04	.8543E+03	.5475E-05	.4121E-10
7	.1409E-12	.6457E-04	.2179E+03	.2854E-05	.3071E-10
8.	.4117E-12	.9230E-04	.4890E+02	.1389E-05	.2013E-10
9	.1203E-11	.1320E-03	.1233E+02	.6742E-06	.1483E-10
10	.3000E-10	.3855E-03	.1054E+01	.4921E-06	.3162E-10
11	.3780E-10	.4164E-03	.8709E+00	.4744E-06	.3292E-10
12	.4762E-10	.4497E-03	.7135E+00	.4533E-06	.3398E-10
13	.6000E-10	.4857E-03	.5793E+00	.4294E-06	.3476E-10
14	.1000E-09	.5759E-03	.3539E+00	.3687E-06	.3539E-10

INTERPOLATED DISTRIBUTION

1	.1461E-19	.3033E-06	.1393E+05	.4024E-08	.2034E-15
2	.4268E-19	.4336E-06	.3291E+05	.1944E-07	.1404E-14
3	.3643E-18	.8861E-06	.1883E+06	.2671E-06	.3945E-13
4	.1064E-17	.1267E-05	.1491E+06	.7516E-06	.1587E-12
5	.9086E-17	.2589E-05	.1414E+06	.2977E-05	.1284E-11
6	.2654E-16	.3701E-05	.9537E+05	.4104E-05	.2532E-11
7	.2266E-15	.7564E-05	.2647E+05	.4758E-05	.5998E-11
8	.6620E-15	.1081E-04	.1780E+05	.6540E-05	.1179E-10
9	.5651E-14	.2210E-04	.1046E+05	.1605E-04	.5913E-10
10	.1651E-13	.3159E-04	.4777E+04	.1498E-04	.7887E-10
11	.6896E-13	.5088E-04	.3834E+03	.3118E-05	.2644E-10
12	.9858E-13	.5731E-04	.2350E+03	.2426E-05	.2317E-10
13	.2015E-12	.7273E-04	.1782E+03	.2961E-05	.3589E-10
14	.2880E-12	.8194E-04	.1110E+03	.2340E-05	.3196E-10
15	.5886E-12	.1040E-03	.1689E+02	.5736E-06	.9940E-11
16	.8415E-12	.1171E-03	.9169E+01	.3952E-06	.7715E-11
17	.3515E-11	.1886E-03	.1528E+02	.1708E-05	.5371E-10
18	.1027E-10	.2697E-03	.7487E+01	.1710E-05	.7688E-10
19	.3240E-10	.3955E-03	.9609E+00	.4723E-06	.3113E-10
20	.3500E-10	.4058E-03	.9093E+00	.4705E-06	.3182E-10
21	.4082E-10	.4272E-03	.8236E+00	.4722E-06	.3362E-10
22	.4409E-10	.4383E-03	.7687E+00	.4640E-06	.3389E-10
23	.5143E-10	.4614E-03	.6639E+00	.4440E-06	.3415E-10
24	.5666E-10	.4734E-03	.6197E+00	.4363E-06	.3443E-10
25	.7114E-10	.5141E-03	.4981E+00	.4136E-06	.3543E-10
26	.8434E-10	.5441E-03	.4242E+00	.3945E-06	.3578E-10

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.5437E-15	.3011E-05	.1393E+06	.1283E-04	.7575E-10

EXAMPLE NO. 6 CONDENSATION AND RESTART

SMALLEST PARTICLE SIZE	.1000E-17	LARGEST PARTICLE SIZE	.1000E-11
RELATIVE INTEGRATION ERROR	.3000E-02	ABSOLUTE INTEGRATION ERROR	.1000E-19
TOTAL NUMBER OF GRID POINTS	25	MAXIMUM NUMBER OF GRID POINTS	30
NUMBER OF DISCRETE SIZES	0	NUMBER OF MULTIPLETS GIVEN	0
NUMBER OF OUTPUT TIMES	3	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	0	NUMBER OF GRID POINTS GIVEN	0
NUMBER OF INTERPOLATING POINTS	1	NUMBER OF CONTINUOUS SOURCE TERMS	0
NUMBER OF CONTINUOUS REMOVAL TERMS	1	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	1
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 1 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	.1000E+01	2	.1000E+03	3	.2000E+03						

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.1000E-17	2	.1778E-17	3	.3162E-17	4	.5623E-17	5	.1000E-16	6	.1778E-16
7	.3162E-16	8	.5623E-16	9	.1000E-15	10	.1778E-15	11	.3162E-15	12	.5623E-15
13	.1000E-14	14	.1778E-14	15	.3162E-14	16	.5623E-14	17	.1000E-13	18	.1778E-13
19	.3162E-13	20	.5623E-13	21	.1000E-12	22	.1778E-12	23	.3162E-12	24	.5623E-12
25	.1000E-11										

NO DATA INPUT ERRORS FOUND

TIME = .1000E+01 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.1000E-17	.1241E-05	.8075E+06	.3905E-05	.8075E-12
2	.1778E-17	.1503E-05	.6082E+06	.4317E-05	.1082E-11
3	.3162E-17	.1821E-05	.4579E+06	.4770E-05	.1448E-11
4	.5623E-17	.2206E-05	.6130E+06	.9374E-05	.3447E-11
5	.1000E-16	.2673E-05	.1856E+06	.4166E-05	.1856E-11
6	.1778E-16	.3238E-05	.8191E+05	.2699E-05	.1457E-11
7	.3162E-16	.3923E-05	.3615E+05	.1748E-05	.1143E-11
8	.5623E-16	.4753E-05	.2728E+05	.1936E-05	.1534E-11
9	.1000E-15	.5759E-05	.2814E+05	.2932E-05	.2814E-11
10	.1778E-15	.6977E-05	.2903E+05	.4439E-05	.5162E-11
11	.3162E-15	.8453E-05	.2385E+05	.5354E-05	.7543E-11
12	.5623E-15	.1024E-04	.1708E+05	.5627E-05	.9605E-11
13	.1000E-14	.1241E-04	.1223E+05	.5913E-05	.1223E-10
14	.1778E-14	.1503E-04	.6737E+04	.4782E-05	.1198E-10
15	.3162E-14	.1821E-04	.3194E+04	.3327E-05	.1010E-10
16	.5623E-14	.2206E-04	.1514E+04	.2316E-05	.8515E-11
17	.1000E-13	.2673E-04	.7799E+03	.1751E-05	.7799E-11
18	.1778E-13	.3238E-04	.4222E+03	.1391E-05	.7508E-11
19	.3162E-13	.3923E-04	.2285E+03	.1105E-05	.7226E-11
20	.5623E-13	.4753E-04	.1128E+03	.8007E-06	.6344E-11
21	.1000E-12	.5759E-04	.4658E+02	.4853E-06	.4658E-11
22	.1778E-12	.6977E-04	.2317E+02	.3543E-06	.4120E-11
23	.3162E-12	.8453E-04	.1526E+02	.3425E-06	.4826E-11
24	.5623E-12	.1024E-03	.7947E+01	.2322E-06	.3963E-11
25	.1000E-11	.1241E-03	.2623E+01	.1268E-06	.2623E-11

INTERPOLATED DISTRIBUTION

1	.1334E-17	.1366E-05	.7159E+06	.4195E-05	.9547E-12
2	.2371E-17	.1655E-05	.4903E+06	.4217E-05	.1163E-11
3	.4217E-17	.2004E-05	.5651E+06	.7133E-05	.2383E-11
4	.7499E-17	.2428E-05	.4270E+06	.7912E-05	.3202E-11
5	.1334E-16	.2942E-05	.9023E+05	.2454E-05	.1203E-11
6	.2371E-16	.3565E-05	.6234E+05	.2489E-05	.1478E-11
7	.4217E-16	.4319E-05	.2644E+05	.1549E-05	.1115E-11
8	.7499E-16	.5232E-05	.2804E+05	.2411E-05	.2103E-11
9	.1334E-15	.6339E-05	.2890E+05	.3648E-05	.3853E-11
10	.2371E-15	.7680E-05	.2713E+05	.5026E-05	.6433E-11
11	.4217E-15	.9304E-05	.2028E+05	.5516E-05	.8553E-11
12	.7499E-15	.1127E-04	.1459E+05	.5822E-05	.1094E-10
13	.1334E-14	.1366E-04	.9452E+04	.5538E-05	.1261E-10
14	.2371E-14	.1655E-04	.4657E+04	.4005E-05	.1104E-10
15	.4217E-14	.2004E-04	.2186E+04	.2760E-05	.9220E-11
16	.7499E-14	.2428E-04	.1072E+04	.1986E-05	.8040E-11
17	.1334E-13	.2942E-04	.5725E+03	.1557E-05	.7636E-11
18	.2371E-13	.3565E-04	.3115E+03	.1244E-05	.7388E-11
19	.4217E-13	.4319E-04	.1636E+03	.9587E-06	.6900E-11
20	.7499E-13	.5232E-04	.7377E+02	.6344E-06	.5532E-11
21	.1334E-12	.6339E-04	.3099E+02	.3912E-06	.4133E-11
22	.2371E-12	.7680E-04	.1879E+02	.3481E-06	.4455E-11
23	.4217E-12	.9304E-04	.1104E+02	.3003E-06	.4667E-11
24	.7499E-12	.1127E-03	.4398E+01	.1755E-06	.3398E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.5079E-16	.2888E-05	.8102E+06	.6012E-05	.1067E-10

TIME = .1000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.1000E-17	.1241E-05	.1218E+07	.5890E-05	.1218E-11
2	.1778E-17	.1503E-05	.9230E+06	.6551E-05	.1641E-11
3	.3162E-17	.1821E-05	.5000E+06	.5209E-05	.1581E-11
4	.5623E-17	.2206E-05	.6833E+06	.1045E-04	.3842E-11
5	.1000E-16	.2673E-05	.2819E+06	.6328E-05	.2819E-11
6	.1778E-16	.3238E-05	.9332E+05	.3075E-05	.1660E-11
7	.3162E-16	.3923E-05	.4120E+05	.1993E-05	.1303E-11
8	.5623E-16	.4753E-05	.2792E+05	.1982E-05	.1570E-11
9	.1000E-15	.5759E-05	.2852E+05	.2971E-05	.2852E-11
10	.1778E-15	.6977E-05	.2939E+05	.4495E-05	.5227E-11
11	.3162E-15	.8453E-05	.2419E+05	.5430E-05	.7649E-11
12	.5623E-15	.1024E-04	.1726E+05	.5687E-05	.9706E-11
13	.1000E-14	.1241E-04	.1233E+05	.5961E-05	.1233E-10
14	.1778E-14	.1503E-04	.6791E+04	.4820E-05	.1208E-10
15	.3162E-14	.1821E-04	.3212E+04	.3347E-05	.1016E-10
16	.5623E-14	.2206E-04	.1520E+04	.2324E-05	.8547E-11
17	.1000E-13	.2673E-04	.7817E+03	.1755E-05	.7817E-11
18	.1778E-13	.3238E-04	.4229E+03	.1393E-05	.7520E-11
19	.3162E-13	.3923E-04	.2287E+03	.1106E-05	.7233E-11
20	.5623E-13	.4753E-04	.1129E+03	.8014E-06	.6349E-11
21	.1000E-12	.5759E-04	.4661E+02	.4856E-06	.4661E-11
22	.1778E-12	.6977E-04	.2317E+02	.3544E-06	.4121E-11
23	.3162E-12	.8453E-04	.1526E+02	.3426E-06	.4826E-11
24	.5623E-12	.1024E-03	.7046E+01	.2322E-06	.3963E-11
25	.1000E-11	.1241E-03	.2622E+01	.1268E-06	.2622E-11

INTERPOLATED DISTRIBUTION

1	.1334E-17	.1366E-05	.1104E+07	.6469E-05	.1472E-11
2	.2371E-17	.1655E-05	.6582E+06	.5660E-05	.1561E-11
3	.4217E-17	.2004E-05	.5915E+06	.7466E-05	.2494E-11
4	.7499E-17	.2428E-05	.5282E+06	.9787E-05	.3961E-11
5	.1334E-16	.2942E-05	.1447E+06	.3934E-05	.1929E-11
6	.2371E-16	.3565E-05	.6247E+05	.2494E-05	.1481E-11
7	.4217E-16	.4319E-05	.3095E+05	.1814E-05	.1305E-11
8	.7499E-16	.5232E-05	.2766E+05	.2379E-05	.2074E-11
9	.1334E-15	.6339E-05	.2948E+05	.3721E-05	.3931E-11
10	.2371E-15	.7680E-05	.2743E+05	.5083E-05	.6506E-11
11	.4217E-15	.9304E-05	.2056E+05	.5591E-05	.8670E-11
12	.7499E-15	.1127E-04	.1471E+05	.5872E-05	.1103E-10
13	.1334E-14	.1366E-04	.9530E+04	.5584E-05	.1271E-10
14	.2371E-14	.1655E-04	.4691E+04	.4034E-05	.1112E-10
15	.4217E-14	.2004E-04	.2196E+04	.2772E-05	.9262E-11
16	.7499E-14	.2428E-04	.1075E+04	.1993E-05	.8065E-11
17	.1334E-13	.2942E-04	.5736E+03	.1560E-05	.7649E-11
18	.2371E-13	.3565E-04	.3119E+03	.1245E-05	.7397E-11
19	.4217E-13	.4319E-04	.1638E+03	.9596E-06	.6907E-11
20	.7499E-13	.5232E-04	.7382E+02	.6348E-06	.5536E-11
21	.1334E-12	.6339E-04	.3101E+02	.3914E-06	.4135E-11
22	.2371E-12	.7680E-04	.1879E+02	.3481E-06	.4456E-11
23	.4217E-12	.9304E-04	.1104E+02	.3003E-06	.4657E-11
24	.7499E-12	.1127E-03	.4397E+01	.1765E-06	.3298E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.4028E-16	.2162E-05	.2722E+06	.6676E-05	.1095E-10

TIME = .2000E+03 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.1000E-17	.1241E-05	.1622E+07	.7843E-05	.1622E-11
2	.1778E-17	.1503E-05	.1346E+07	.9655E-05	.2394E-11
3	.3162E-17	.1821E-05	.6238E+06	.6499E-05	.1973E-11
4	.5623E-17	.2206E-05	.7292E+06	.1115E-04	.4101E-11
5	.1000E-16	.2673E-05	.3840E+06	.8619E-05	.3840E-11
6	.1778E-16	.3238E-05	.1155E+06	.3805E-05	.2054E-11
7	.3162E-16	.3923E-05	.4586E+05	.2218E-05	.1450E-11
8	.5623E-16	.4753E-05	.2891E+05	.2052E-05	.1625E-11
9	.1000E-15	.5759E-05	.2884E+05	.3005E-05	.2884E-11
10	.1778E-15	.6977E-05	.2976E+05	.4551E-05	.5292E-11
11	.3162E-15	.8453E-05	.2452E+05	.5504E-05	.7753E-11
12	.5623E-15	.1024E-04	.1744E+05	.5745E-05	.9806E-11
13	.1000E-14	.1241E-04	.1243E+05	.6009E-05	.1243E-10
14	.1778E-14	.1503E-04	.6844E+04	.4858E-05	.1217E-10
15	.3162E-14	.1821E-04	.3230E+04	.3366E-05	.1022E-10
16	.5623E-14	.2206E-04	.1526E+04	.2333E-05	.8579E-11
17	.1000E-13	.2673E-04	.7835E+03	.1759E-05	.7835E-11
18	.1778E-13	.3238E-04	.4235E+03	.1395E-05	.7531E-11
19	.3162E-13	.3923E-04	.2290E+03	.1107E-05	.7241E-11
20	.5623E-13	.4753E-04	.1130E+03	.8021E-06	.6354E-11
21	.1000E-12	.5759E-04	.4664E+02	.4859E-06	.4664E-11
22	.1778E-12	.6977E-04	.2318E+02	.3545E-06	.4122E-11
23	.3162E-12	.8453E-04	.1526E+02	.3426E-06	.4827E-11
24	.5623E-12	.1024E-03	.7047E+01	.2322E-06	.3963E-11
25	.1000E-11	.1241E-03	.2622E+01	.1268E-06	.2622E-11

INTERPOLATED DISTRIBUTION

1	.1334E-17	.1366E-05	.1554E+07	.9107E-05	.2073E-11
2	.2371E-17	.1655E-05	.9410E+06	.8093E-05	.2232E-11
3	.4217E-17	.2004E-05	.6388E+06	.8063E-05	.2694E-11
4	.7499E-17	.2428E-05	.6100E+06	.1130E-04	.4574E-11
5	.1334E-16	.2942E-05	.2140E+06	.5820E-05	.2854E-11
6	.2371E-16	.3565E-05	.6671E+05	.2663E-05	.1582E-11
7	.4217E-16	.4319E-05	.3464E+05	.2029E-05	.1461E-11
8	.7499E-16	.5232E-05	.2773E+05	.2385E-05	.2079E-11
9	.1334E-15	.6339E-05	.2991E+05	.3776E-05	.3989E-11
10	.2371E-15	.7680E-05	.2778E+05	.5146E-05	.6587E-11
11	.4217E-15	.9304E-05	.2082E+05	.5662E-05	.8780E-11
12	.7499E-15	.1127E-04	.1484E+05	.5923E-05	.1113E-10
13	.1334E-14	.1366E-04	.9606E+04	.5628E-05	.1281E-10
14	.2371E-14	.1655E-04	.4724E+04	.4063E-05	.1120E-10
15	.4217E-14	.2004E-04	.2206E+04	.2784E-05	.9302E-11
16	.7499E-14	.2428E-04	.1079E+04	.1999E-05	.8889E-11
17	.1334E-13	.2942E-04	.5746E+03	.1563E-05	.7662E-11
18	.2371E-13	.3565E-04	.3124E+03	.1247E-05	.7407E-11
19	.4217E-13	.4319E-04	.1639E+03	.9604E-06	.6913E-11
20	.7499E-13	.5232E-04	.7388E+02	.6353E-06	.5540E-11
21	.1334E-12	.6339E-04	.3102E+02	.3915E-06	.4136E-11
22	.2371E-12	.7680E-04	.1879E+02	.3482E-06	.4456E-11
23	.4217E-12	.9304E-04	.1104E+02	.3004E-06	.4657E-11
24	.7499E-12	.1127E-03	.4397E+01	.1756E-06	.3298E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.3218E-16	.2064E-05	.3502E+06	.7487E-05	.1127E-10

EXAMPLE NO. 7 INPUT ERRORS TO DC GDE

SMALLEST PARTICLE SIZE	.1000E+01	LARGEST PARTICLE SIZE	.1000E+02
RELATIVE INTEGRATION ERROR	.1000E-02	ABSOLUTE INTEGRATION ERROR	.1000E-19
TOTAL NUMBER OF GRID POINTS	12	MAXIMUM NUMBER OF GRID POINTS	25
NUMBER OF DISCRETE SIZES	1	NUMBER OF MULTIPLETS GIVEN	2
NUMBER OF OUTPUT TIMES	1	SWITCH INTERPOLATION AT OUTPUT NUMBER	1
STEADY STATE AT OUTPUT NUMBER	9	NUMBER OF GRID POINTS GIVEN	4
NUMBER OF INTERPOLATING POINTS	2	NUMBER OF CONTINUOUS SOURCE TERMS	0
NUMBER OF CONTINUOUS REMOVAL TERMS	0	NUMBER OF DISCRETE SOURCE TERMS	0
NUMBER OF DISCRETE REMOVAL TERMS	0	CONDENSATION (0=NO/1=YES)	1
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	3
SPLINE NUMBER FOR SWITCHED METHOD	0	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 0 2 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.										

GRID POINTS AT THE FOLLOWING MULTIPLETS

2 19 2

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.2000E+01	2	.1900E+02	3	.2000E+01	4	.2000E+01	5	.3000E+01	6	.5000E+01
7	.4000E+01	8	.4804E+01	9	.5771E+01	10	.6931E+01	11	.8326E+01	12	.1000E+02

---IF CONDENSATION IS INCLUDED THERE CAN BE NO DISCRETE SIZES

---WHETHER TO CALL SETUP HAS NOT BEEN PROPERLY SPECIFIED

---BETA ROUTINE IS NOT POSITIVE

---FOR PROBLEMS WITH NO COAGULATION IT IS BETTER TO USE THE METHOD OF CHARACTERISTICS
REF. J. COLLOID AND INTERFACE SCIENCE, V.68, P.173 (1979)

---IF THE DISCRETE CONTINUOUS EQUATIONS ARE USED, THERE MUST BE AT LEAST 2 DISCRETE SIZES

---MULTIPLET NUMBER 2 IS GREATER THAN TWICE THE NUMBER OF DISCRETE SIZES

---GRID POINT NUMBER 3 HAS A MULTIPLET NUMBER LESS THAN OR EQUAL TO THE NUMBER OF DISCRETE SIZES + 1

---MULTIPLET NUMBERS 2 AND 3 ARE OUT OF ORDER

---GRID POINTS MUST BE IN ORDER, CHECK GRID POINT NO. 3

---GRID POINTS MUST BE IN ORDER, CHECK GRID POINT NO. 4

---GRID POINTS MUST BE IN ORDER, CHECK GRID POINT NO. 7

EXAMPLE NO. 8 DC GDE WITH SOURCE

SMALLEST PARTICLE SIZE	.6540E-22	LARGEST PARTICLE SIZE	.5240E-12
RELATIVE INTEGRATION ERROR	.5000E-02	ABSOLUTE INTEGRATION ERROR	.1000E-24
TOTAL NUMBER OF GRID POINTS	25	MAXIMUM NUMBER OF GRID POINTS	30
NUMBER OF DISCRETE SIZES	5	NUMBER OF MULTIPLETS GIVEN	2
NUMBER OF OUTPUT TIMES	4	SWITCH INTERPOLATION AT OUTPUT NUMBER	0
STEADY STATE AT OUTPUT NUMBER	-1	NUMBER OF GRID POINTS GIVEN	2
NUMBER OF INTERPOLATING POINTS	1	NUMBER OF CONTINUOUS SOURCE TERMS	1
NUMBER OF CONTINUOUS REMOVAL TERMS	1	NUMBER OF DISCRETE SOURCE TERMS	2
NUMBER OF DISCRETE REMOVAL TERMS	1	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	1	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	0 1 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.1000E+00	3	.1000E+01	4	.1000E+02				

GRID POINTS AT THE FOLLOWING MULTIPLETS

6 8 10

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.3924E-21	2	.5232E-21	3	.6540E-21	4	.9000E-21	5	.1400E-20	6	.3757E-20
7	.1000E-19	8	.2705E-19	9	.7257E-19	10	.1947E-18	11	.5225E-18	12	.1402E-17
13	.3762E-17	14	.1009E-16	15	.2709E-16	16	.7268E-16	17	.1950E-15	18	.5233E-15
19	.1404E-14	20	.3767E-14	21	.1011E-13	22	.2712E-13	23	.7278E-13	24	.1953E-12
25	.5240E-12										

NO DATA INPUT ERRORS FOUND

TIME -0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3870E+08	.1003E-05	.1519E-13
2	.5232E-21	.9997E-07	.3358E+08	.1055E-05	.1757E-13
3	.6540E-21	.1077E-06	.3008E+08	.1096E-05	.1967E-13
4	.9000E-21	.1198E-06	.2570E+08	.1158E-05	.2313E-13
5	.1400E-20	.1388E-06	.2067E+08	.1251E-05	.2893E-13
6	.3757E-20	.1929E-06	.1270E+08	.1484E-05	.4770E-13
7	.1008E-19	.2680E-06	.7804E+07	.1761E-05	.7866E-13
8	.2705E-19	.3724E-06	.4795E+07	.2090E-05	.1297E-12
9	.7257E-19	.5175E-06	.2947E+07	.2479E-05	.2139E-12
10	.1947E-18	.7191E-06	.1811E+07	.2942E-05	.3526E-12
11	.5225E-18	.9993E-06	.1113E+07	.3491E-05	.5814E-12
12	.1402E-17	.1389E-05	.6838E+06	.4142E-05	.9587E-12
13	.3762E-17	.1930E-05	.4202E+06	.4915E-05	.1581E-11
14	.1009E-16	.2681E-05	.1831E+06	.4136E-05	.1848E-11
15	.2709E-16	.3726E-05	.4503E+05	.1964E-05	.1220E-11
16	.7268E-16	.5178E-05	.2766E+05	.2330E-05	.2010E-11
17	.1950E-15	.7195E-05	.2916E+05	.4743E-05	.5687E-11
18	.5233E-15	.9998E-05	.1781E+05	.5592E-05	.9318E-11
19	.1404E-14	.1389E-04	.9150E+04	.5548E-05	.1285E-10
20	.3767E-14	.1931E-04	.2545E+04	.2979E-05	.9587E-11
21	.1011E-13	.2683E-04	.7709E+03	.1743E-05	.7793E-11
22	.2712E-13	.3728E-04	.2691E+03	.1175E-05	.7299E-11
23	.7278E-13	.5180E-04	.7951E+02	.6703E-06	.5787E-11
24	.1953E-12	.7198E-04	.2174E+02	.3539E-06	.4246E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3609E+08	.1030E-05	.1635E-13
2	.5850E-21	.1038E-06	.3178E+08	.1075E-05	.1859E-13
3	.7672E-21	.1136E-06	.2781E+08	.1127E-05	.2133E-13
4	.1122E-20	.1289E-06	.2304E+08	.1204E-05	.2587E-13
5	.2293E-20	.1636E-06	.1620E+08	.1362E-05	.3714E-13
6	.6153E-20	.2274E-06	.9954E+07	.1616E-05	.6125E-13
7	.1651E-19	.3159E-06	.6116E+07	.1918E-05	.1010E-12
8	.4430E-19	.4390E-06	.3759E+07	.2276E-05	.1665E-12
9	.1189E-18	.6101E-06	.2310E+07	.2700E-05	.2746E-12
10	.3190E-18	.8477E-06	.1420E+07	.3205E-05	.4529E-12
11	.8559E-18	.1178E-05	.8705E+06	.3795E-05	.7450E-12
12	.2297E-17	.1637E-05	.5422E+06	.4564E-05	.1245E-11
13	.6162E-17	.2275E-05	.2966E+06	.4821E-05	.1828E-11
14	.1653E-16	.3161E-05	.9706E+05	.3046E-05	.1605E-11
15	.4437E-16	.4392E-05	.2712E+05	.1644E-05	.1203E-11
16	.1190E-15	.6103E-05	.2998E+05	.3509E-05	.3569E-11
17	.3194E-15	.8481E-05	.2418E+05	.5463E-05	.7722E-11
18	.8571E-15	.1179E-04	.1296E+05	.5656E-05	.1111E-10
19	.2300E-14	.1638E-04	.5448E+04	.4590E-05	.1253E-10
20	.6171E-14	.2276E-04	.1191E+04	.1938E-05	.7358E-11
21	.1656E-13	.3162E-04	.4966E+03	.1560E-05	.8223E-11
22	.4443E-13	.4394E-04	.1403E+03	.8513E-06	.8235E-11
23	.1192E-12	.6106E-04	.4342E+02	.5086E-06	.5177E-11
24	.3199E-12	.8485E-04	.1172E+02	.2651E-06	.3748E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9293E-18	.2391E-06	.1131E+08	.8101E-05	.1051E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION U CC/CC
1	.6540E-22	.4999E-07	.1000E+08	.7850E-07	.6540E-15
2	.1308E-21	.6298E-07	.3000E+07	.3738E-07	.3924E-15
3	.1962E-21	.7209E-07	.1000E+07	.1633E-07	.1962E-15
4	.2616E-21	.7935E-07	.3000E+06	.5934E-08	.7848E-16
5	.3270E-21	.8548E-07	.1000E+06	.2295E-08	.3270E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9401E-22	.5509E-07	.1440E+08	.1404E-06	.1354E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.
3	0.

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION U CC/CC
1	.6540E-22	.4999E-07	.1012E+09	.7941E-06	.6616E-14
2	.1308E-21	.6298E-07	.3754E+07	.4677E-07	.4910E-15
3	.1962E-21	.7209E-07	.6313E+06	.1031E-07	.1239E-15
4	.2616E-21	.7935E-07	.2908E+06	.5751E-08	.7606E-16
5	.3270E-21	.8548E-07	.3653E+06	.8384E-08	.1194E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.6993E-22	.5078E-07	.1062E+09	.8653E-06	.7426E-14

TIME = .1000E+00 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3842E+08	.9959E-06	.1508E-13
2	.5232E-21	.9997E-07	.3342E+08	.1049E-05	.1749E-13
3	.6540E-21	.1077E-06	.2996E+08	.1092E-05	.1960E-13
4	.9000E-21	.1198E-06	.2562E+08	.1155E-05	.2306E-13
5	.1400E-20	.1388E-06	.2062E+08	.1248E-05	.2887E-13
6	.3757E-20	.1929E-06	.1268E+08	.1482E-05	.4765E-13
7	.1008E-19	.2680E-06	.7799E+07	.1760E-05	.7861E-13
8	.2705E-19	.3724E-06	.4794E+07	.2089E-05	.1297E-12
9	.7257E-19	.5175E-06	.2946E+07	.2479E-05	.2138E-12
10	.1947E-18	.7191E-06	.1811E+07	.2942E-05	.3526E-12
11	.5225E-18	.9993E-06	.1113E+07	.3491E-05	.5814E-12
12	.1402E-17	.1389E-05	.6838E+06	.4142E-05	.9587E-12
13	.3762E-17	.1930E-05	.4202E+06	.4915E-05	.1581E-11
14	.1009E-16	.2681E-05	.1831E+06	.4137E-05	.1849E-11
15	.2709E-16	.3726E-05	.4504E+05	.1964E-05	.1220E-11
16	.7268E-16	.5178E-05	.2766E+05	.2330E-05	.2010E-11
17	.1950E-15	.7195E-05	.2916E+05	.4743E-05	.5687E-11
18	.5233E-15	.9998E-05	.1781E+05	.5592E-05	.9318E-11
19	.1404E-14	.1389E-04	.9150E+04	.5548E-05	.1285E-10
20	.3767E-14	.1931E-04	.2545E+04	.2979E-05	.9587E-11
21	.1011E-13	.2683E-04	.7709E+03	.1743E-05	.7793E-11
22	.2712E-13	.3728E-04	.2691E+03	.1175E-05	.7299E-11
23	.7278E-13	.5180E-04	.7951E+02	.6703E-06	.5787E-11
24	.1953E-12	.7198E-04	.2174E+02	.3539E-06	.4246E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3587E+08	.1023E-05	.1625E-13
2	.5850E-21	.1038E-06	.3164E+08	.1070E-05	.1851E-13
3	.7672E-21	.1136E-06	.2771E+08	.1123E-05	.2126E-13
4	.1122E-20	.1289E-06	.2298E+08	.1201E-05	.2580E-13
5	.2293E-20	.1636E-06	.1617E+08	.1360E-05	.3709E-13
6	.6153E-20	.2274E-06	.9945E+07	.1615E-05	.6120E-13
7	.1651E-19	.3159E-06	.6114E+07	.1917E-05	.1009E-12
8	.4430E-19	.4390E-06	.3758E+07	.2275E-05	.1665E-12
9	.1189E-18	.6101E-06	.2309E+07	.2700E-05	.2745E-12
10	.3190E-18	.8477E-06	.1420E+07	.3205E-05	.4529E-12
11	.8559E-18	.1178E-05	.8705E+06	.3795E-05	.7451E-12
12	.2297E-17	.1637E-05	.5422E+06	.4564E-05	.1245E-11
13	.6162E-17	.2275E-05	.2966E+06	.4821E-05	.1828E-11
14	.1653E-16	.3161E-05	.9706E+05	.3046E-05	.1605E-11
15	.4437E-16	.4392E-05	.2712E+05	.1644E-05	.1203E-11
16	.1190E-15	.6103E-05	.2998E+05	.3509E-05	.3569E-11
17	.3194E-15	.8481E-05	.2418E+05	.6463E-05	.7722E-11
18	.8571E-15	.1179E-04	.1296E+05	.5656E-05	.1111E-10
19	.2300E-14	.1638E-04	.5448E+04	.4590E-05	.1853E-10
20	.6171E-14	.2276E-04	.1191E+04	.1938E-05	.7352E-11
21	.1656E-13	.3162E-04	.4966E+03	.1560E-05	.8223E-11
22	.4443E-13	.4394E-04	.1403E+03	.8513E-06	.6235E-11
23	.1192E-12	.6106E-04	.4342E+02	.5088E-06	.5177E-11
24	.3199E-12	.8485E-04	.1172E+02	.2651E-06	.3748E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9316E-18	.8393E-06	.1128E+08	.8100E-05	.1051E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.8587E-17
2	-.1014E-19

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1127E+08	.8847E-07	.7371E-15
2	.1308E-21	.6298E-07	.2850E+07	.3551E-07	.3727E-15
3	.1962E-21	.7209E-07	.9757E+06	.1593E-07	.1914E-15
4	.2616E-21	.7935E-07	.2956E+06	.5846E-08	.7732E-16
5	.3270E-21	.8548E-07	.1051E+06	.2411E-08	.3435E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9118E-22	.5457E-07	.1550E+08	.1482E-06	.1413E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.6540E-16
2	.5852E-20
3	-.1695E-17

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1012E+09	.7942E-06	.6616E-14
2	.1308E-21	.6298E-07	.3753E+07	.4677E-07	.4909E-15
3	.1962E-21	.7209E-07	.6310E+06	.1030E-07	.1238E-15
4	.2616E-21	.7935E-07	.2897E+06	.5731E-08	.7579E-16
5	.3270E-21	.8548E-07	.3631E+06	.8336E-08	.1187E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.6992E-22	.5078E-07	.1062E+09	.8653E-06	.7426E-14

TIME = .1000E+01 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3590E+08	.9305E-06	.1409E-13
2	.5232E-21	.9997E-07	.3201E+08	.1005E-05	.1675E-13
3	.6540E-21	.1077E-06	.2893E+08	.1054E-05	.1892E-13
4	.9000E-21	.1198E-06	.2492E+08	.1124E-05	.2243E-13
5	.1400E-20	.1388E-06	.2022E+08	.1224E-05	.2831E-13
6	.3757E-20	.1929E-06	.1255E+08	.1467E-05	.4716E-13
7	.1008E-19	.2680E-06	.7755E+07	.1750E-05	.7817E-13
8	.2705E-19	.3724E-06	.4779E+07	.2083E-05	.1293E-12
9	.7267E-19	.5175E-06	.2942E+07	.2475E-05	.2135E-12
10	.1947E-18	.7191E-06	.1810E+07	.2940E-05	.3524E-12
11	.5225E-18	.9993E-06	.1113E+07	.3491E-05	.5814E-12
12	.1402E-17	.1389E-05	.6839E+06	.4143E-05	.9589E-12
13	.3762E-17	.1930E-05	.4203E+06	.4917E-05	.1581E-11
14	.1009E-16	.2681E-05	.1832E+06	.4138E-05	.1849E-11
15	.2709E-16	.3726E-05	.4506E+05	.1965E-05	.1220E-11
16	.7268E-16	.5178E-05	.2766E+05	.2330E-05	.2010E-11
17	.1950E-15	.7195E-05	.2916E+05	.4743E-05	.5687E-11
18	.5233E-15	.9998E-05	.1781E+05	.5592E-05	.9319E-11
19	.1404E-14	.1389E-04	.9150E+04	.5548E-05	.1285E-10
20	.3767E-14	.1931E-04	.2545E+04	.2980E-05	.9587E-11
21	.1011E-13	.2683E-04	.7710E+03	.1743E-05	.7793E-11
22	.2712E-13	.3728E-04	.2691E+03	.1175E-05	.7299E-11
23	.7278E-13	.5180E-04	.7951E+02	.6703E-06	.5787E-11
24	.1953E-12	.7198E-04	.2174E+02	.3539E-06	.4246E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3397E+08	.9691E-06	.1539E-13
2	.5850E-21	.1038E-06	.3046E+08	.1030E-05	.1782E-13
3	.7672E-21	.1136E-06	.2686E+08	.1088E-05	.2060E-13
4	.1122E-20	.1289E-06	.2246E+08	.1173E-05	.2521E-13
5	.2293E-20	.1636E-06	.1595E+08	.1341E-05	.3658E-13
6	.6153E-20	.2274E-06	.9869E+07	.1693E-05	.6073E-13
7	.1651E-19	.3159E-06	.6089E+07	.1989E-05	.1005E-12
8	.4430E-19	.4390E-06	.3750E+07	.2270E-05	.1661E-12
9	.1189E-18	.6101E-06	.2307E+07	.2697E-05	.2743E-12
10	.3190E-18	.8477E-06	.1419E+07	.3204E-05	.4527E-12
11	.8559E-18	.1178E-05	.8706E+06	.3795E-05	.7451E-12
12	.2297E-17	.1637E-05	.5424E+06	.4566E-05	.1246E-11
13	.6162E-17	.2275E-05	.2967E+06	.4823E-05	.1828E-11
14	.1653E-16	.3161E-05	.9711E+05	.3048E-05	.1606E-11
15	.4437E-16	.4392E-05	.2713E+05	.1644E-05	.1204E-11
16	.1190E-15	.6103E-05	.2998E+05	.3509E-05	.3569E-11
17	.3194E-15	.8481E-05	.2418E+05	.5463E-05	.7723E-11
18	.8571E-15	.1179E-04	.1296E+05	.5656E-05	.1111E-10
19	.2300E-14	.1638E-04	.6448E+04	.4690E-05	.1263E-10
20	.6171E-14	.2276E-04	.1191E+04	.1938E-05	.7352E-11
21	.1656E-13	.3162E-04	.4966E+03	.1560E-05	.8223E-11
22	.4443E-13	.4394E-04	.1403E+03	.8513E-06	.6235E-11
23	.1192E-12	.6106E-04	.4342E+02	.5086E-06	.5177E-11
24	.3199E-12	.8485E-04	.1172E+02	.2651E-06	.3749E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9621E-10	.2419E-06	.1104E+08	.8087E-05	.1051E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.8587E-16
2	-.9805E-19

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.2150E+08	.1688E-06	.1406E-14
2	.1308E-21	.6298E-07	.1842E+07	.2295E-07	.2409E-15
3	.1962E-21	.7209E-07	.7853E+06	.1282E-07	.1541E-15
4	.2616E-21	.7935E-07	.2620E+06	.5183E-08	.6854E-16
5	.3270E-21	.8548E-07	.1450E+06	.3329E-08	.4743E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.7814E-22	.5219E-07	.2454E+08	.2131E-06	.1917E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.6540E-15
2	.5852E-19
3	-.1942E-16

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1013E+09	.7952E-06	.6625E-14
2	.1308E-21	.6298E-07	.3684E+07	.4590E-07	.4818E-15
3	.1962E-21	.7209E-07	.6268E+06	.1023E-07	.1230E-15
4	.2616E-21	.7935E-07	.2727E+06	.5394E-08	.7134E-16
5	.3270E-21	.8548E-07	.3443E+06	.7902E-08	.1126E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.6979E-22	.5076E-07	.1062E+09	.8646E-06	.7414E-14

TIME = .1000E+02 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.1949E+08	.5051E-06	.7647E-14
2	.5232E-21	.9997E-07	.2141E+08	.6723E-06	.1120E-13
3	.6540E-21	.1077E-06	.2097E+08	.7643E-06	.1372E-13
4	.9000E-21	.1198E-06	.1937E+08	.8733E-06	.1744E-13
5	.1400E-20	.1388E-06	.1686E+08	.1021E-05	.2361E-13
6	.3757E-20	.1929E-06	.1141E+08	.1333E-05	.4284E-13
7	.1008E-19	.2680E-06	.7360E+07	.1661E-05	.7419E-13
8	.2705E-19	.3724E-06	.4649E+07	.2026E-05	.1257E-12
9	.7257E-19	.5175E-06	.2993E+07	.2442E-05	.2107E-12
10	.1947E-18	.7191E-06	.1801E+07	.2926E-05	.3507E-12
11	.5225E-18	.9993E-06	.1113E+07	.3492E-05	.5817E-12
12	.1402E-17	.1389E-05	.6858E+06	.4154E-05	.9614E-12
13	.3762E-17	.1930E-05	.4217E+06	.4933E-05	.1587E-11
14	.1009E-16	.2681E-05	.1842E+06	.4160E-05	.1859E-11
15	.2709E-16	.3726E-05	.4528E+05	.1975E-05	.1226E-11
16	.7268E-16	.5178E-05	.2766E+05	.2330E-05	.2011E-11
17	.1950E-15	.7195E-05	.2918E+05	.4745E-05	.5690E-11
18	.5233E-15	.9998E-05	.1782E+05	.5596E-05	.9325E-11
19	.1404E-14	.1389E-04	.9155E+04	.5551E-05	.1285E-10
20	.3767E-14	.1931E-04	.2546E+04	.2981E-05	.9592E-11
21	.1011E-13	.2683E-04	.7711E+03	.1743E-05	.7795E-11
22	.2712E-13	.3728E-04	.2692E+03	.1175E-05	.7300E-11
23	.7278E-13	.5180E-04	.7952E+02	.6704E-06	.5787E-11
24	.1953E-12	.7198E-04	.2174E+02	.3539E-06	.4246E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.2070E+08	.5907E-06	.9381E-14
2	.6850E-21	.1038E-06	.2137E+08	.7227E-06	.1250E-13
3	.7672E-21	.1136E-06	.2022E+08	.8196E-06	.1551E-13
4	.1122E-20	.1289E-06	.1813E+08	.9472E-06	.2036E-13
5	.2293E-20	.1636E-06	.1403E+08	.1180E-05	.3217E-13
6	.6153E-20	.2274E-06	.9187E+07	.1492E-05	.5653E-13
7	.1651E-19	.3159E-06	.5863E+07	.1839E-05	.9681E-13
8	.4430E-19	.4390E-06	.3677E+07	.2226E-05	.1629E-12
9	.1189E-18	.6101E-06	.2288E+07	.2675E-05	.2719E-12
10	.3190E-18	.8477E-06	.1417E+07	.3199E-05	.4519E-12
11	.8559E-18	.1178E-05	.8723E+06	.3803E-05	.7466E-12
12	.2297E-17	.1637E-05	.5440E+06	.4579E-05	.1249E-11
13	.6162E-17	.2275E-05	.2979E+06	.4842E-05	.1836E-11
14	.1653E-16	.3161E-05	.9769E+05	.3066E-05	.1615E-11
15	.4437E-16	.4392E-05	.2718E+05	.1647E-05	.1206E-11
16	.1190E-15	.6103E-05	.2999E+05	.3509E-05	.3570E-11
17	.3194E-15	.8481E-05	.2419E+05	.5467E-05	.7728E-11
18	.8571E-15	.1179E-04	.1297E+05	.5669E-05	.1112E-10
19	.2300E-14	.1638E-04	.5451E+04	.4593E-05	.1254E-10
20	.6171E-14	.2276E-04	.1198E+04	.1939E-05	.7356E-11
21	.1656E-13	.3162E-04	.4967E+03	.1560E-05	.8224E-11
22	.4443E-13	.4394E-04	.1404E+03	.8515E-06	.6837E-11
23	.1192E-12	.6106E-04	.4342E+02	.5086E-06	.5178E-11
24	.3199E-12	.8485E-04	.1172E+02	.2651E-06	.3749E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.1148E-17	.2654E-06	.9158E+07	.7985E-05	.1051E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.8587E-15
2	-.8679E-18

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4998E-07	.7176E+08	.5633E-06	.4693E-14
2	.1308E-21	.6298E-07	.1651E+07	.2058E-07	.2160E-15
3	.1962E-21	.7209E-07	.2312E+06	.3775E-08	.4535E-16
4	.2616E-21	.7935E-07	.1567E+06	.3099E-08	.4099E-16
5	.3270E-21	.8548E-07	.2297E+06	.5273E-08	.7512E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.6849E-22	.5052E-07	.7403E+08	.5960E-06	.5071E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.6540E-14
2	.5852E-18
3	-.3532E-15

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1018E+09	.7994E-06	.6660E-14
2	.1308E-21	.6298E-07	.3771E+07	.4699E-07	.4932E-15
3	.1962E-21	.7209E-07	.6102E+06	.9963E-08	.1197E-15
4	.2616E-21	.7935E-07	.2245E+06	.4441E-08	.5873E-16
5	.3270E-21	.8548E-07	.2174E+06	.4989E-08	.7108E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.6941E-22	.5071E-07	.1067E+09	.8658E-06	.7403E-14

EXAMPLE NO. 9 DC GDE AND STEADY STATE

SMALLEST PARTICLE SIZE	.6540E-22	LARGEST PARTICLE SIZE	.5240E-12
RELATIVE INTEGRATION ERROR	.1000E-01	ABSOLUTE INTEGRATION ERROR	.1000E-21
TOTAL NUMBER OF GRID POINTS	25	MAXIMUM NUMBER OF GRID POINTS	30
NUMBER OF DISCRETE SIZES	5	NUMBER OF MULTIPLETS GIVEN	2
NUMBER OF OUTPUT TIMES	6	SWITCH INTERPOLATION AT OUTPUT NUMBER	5
STEADY STATE AT OUTPUT NUMBER	4	NUMBER OF GRID POINTS GIVEN	-3
NUMBER OF INTERPOLATING POINTS	1	NUMBER OF CONTINUOUS SOURCE TERMS	2
NUMBER OF CONTINUOUS REMOVAL TERMS	2	NUMBER OF DISCRETE SOURCE TERMS	2
NUMBER OF DISCRETE REMOVAL TERMS	2	CONDENSATION (0=NO/1=YES)	0
INITIAL SPLINE INTERPOLATION METHOD NUMBER	0	CALL SETUP BEFORE INTERPOLATING (0=NO/1=YES)	1
SPLINE NUMBER FOR SWITCHED METHOD	1	CALL SETUP FOR SWITCHED METHOD (0=NO/1=YES)	0
TIME DEPENDENT COAG./EVAP. COEFFICIENT (0=NO/1=YES)	0	USER SUPPLIED PARAMETER SWITCHES	1 1 0 0 0 0 0 0 0 0

OUTPUT TIMES

NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME	NO.	TIME
1	0.	2	.5000E-01	3	.5000E+00	4	.2000E+01	5	.5000E+01	6	.1000E+02

GRID POINTS AT THE FOLLOWING MULTIPLETS

6 8 10

GRID POINTS

NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
1	.3924E-21	2	.5232E-21	3	.6540E-21	4	.1646E-20	5	.4142E-20	6	.1042E-19
7	.2624E-19	8	.6603E-19	9	.1662E-18	10	.4182E-18	11	.1053E-17	12	.2649E-17
13	.6666E-17	14	.1678E-16	15	.4222E-16	16	.1063E-15	17	.2674E-15	18	.6730E-15
19	.1694E-14	20	.4263E-14	21	.1073E-13	22	.2700E-13	23	.7300E-13	24	.2000E-12
25	.5240E-12										

NO DATA INPUT ERRORS FOUND

TIME =0. SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3870E+08	.1003E-05	.1519E-13
2	.5232E-21	.9997E-07	.3358E+08	.1055E-05	.1757E-13
3	.6540E-21	.1077E-06	.3008E+08	.1096E-05	.1967E-13
4	.1646E-20	.1465E-06	.1908E+08	.1286E-05	.3140E-13
5	.4142E-20	.1993E-06	.1210E+08	.1509E-05	.5013E-13
6	.1042E-19	.2710E-06	.7675E+07	.1771E-05	.8001E-13
7	.2624E-19	.3687E-06	.4868E+07	.2079E-05	.1277E-12
8	.6603E-19	.5015E-06	.3087E+07	.2439E-05	.2039E-12
9	.1662E-18	.6821E-06	.1958E+07	.2862E-05	.3254E-12
10	.4182E-18	.9278E-06	.1242E+07	.3359E-05	.5194E-12
11	.1053E-17	.1262E-05	.7877E+06	.3941E-05	.8290E-12
12	.2649E-17	.1717E-05	.4996E+06	.4625E-05	.1323E-11
13	.6666E-17	.2335E-05	.3169E+06	.5428E-05	.2112E-11
14	.1678E-16	.3176E-05	.8895E+05	.2819E-05	.1492E-11
15	.4222E-16	.4320E-05	.2687E+05	.1575E-05	.1134E-11
16	.1063E-15	.5877E-05	.2823E+05	.3063E-05	.3000E-11
17	.2674E-15	.7994E-05	.2628E+05	.5275E-05	.7028E-11
18	.6730E-15	.1087E-04	.1539E+05	.5716E-05	.1036E-10
19	.1694E-14	.1479E-04	.7174E+04	.4929E-05	.1215E-10
20	.4263E-14	.2012E-04	.2168E+04	.2756E-05	.9242E-11
21	.1073E-13	.2736E-04	.7235E+03	.1702E-05	.7762E-11
22	.2700E-13	.3722E-04	.2704E+03	.1177E-05	.7301E-11
23	.7300E-13	.5185E-04	.7911E+02	.6682E-06	.5775E-11
24	.2000E-12	.7256E-04	.2147E+02	.3550E-06	.4293E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3609E+08	.1030E-05	.1635E-13
2	.5850E-21	.1038E-06	.3178E+08	.1075E-05	.1859E-13
3	.1038E-20	.1256E-06	.2397E+08	.1188E-05	.2486E-13
4	.2611E-20	.1708E-06	.1519E+08	.1393E-05	.3966E-13
5	.6571E-20	.2324E-06	.9637E+07	.1635E-05	.6333E-13
6	.1654E-19	.3161E-06	.6112E+07	.1918E-05	.1011E-12
7	.4162E-19	.4300E-06	.3876E+07	.2251E-05	.1613E-12
8	.1047E-18	.5849E-06	.2459E+07	.2642E-05	.2575E-12
9	.2636E-18	.7955E-06	.1559E+07	.3100E-05	.4110E-12
10	.6635E-18	.1082E-05	.9898E+06	.3641E-05	.6567E-12
11	.1670E-17	.1472E-05	.6242E+06	.4249E-05	.1042E-11
12	.4202E-17	.2002E-05	.4091E+06	.5152E-05	.1719E-11
13	.1058E-16	.2723E-05	.1963E+06	.4573E-05	.2076E-11
14	.2662E-16	.3704E-05	.3834E+05	.1653E-05	.1021E-11
15	.6698E-16	.5039E-05	.2647E+05	.2111E-05	.1773E-11
16	.1686E-15	.6854E-05	.2857E+05	.4217E-05	.4817E-11
17	.4243E-15	.9323E-05	.2123E+05	.5796E-05	.9066E-11
18	.1068E-14	.1268E-04	.1074E+05	.5424E-05	.1146E-10
19	.2687E-14	.1726E-04	.4250E+04	.3973E-05	.1142E-10
20	.6763E-14	.2346E-04	.1132E+04	.1958E-05	.7657E-11
21	.1702E-13	.3191E-04	.4839E+03	.1484E-05	.7895E-11
22	.4440E-13	.4393E-04	.1450E+03	.8791E-06	.6437E-11
23	.1208E-12	.6134E-04	.4157E+02	.4913E-06	.5022E-11
24	.3237E-12	.8519E-04	.1229E+02	.2803E-06	.3980E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9251E-18	.2398E-06	.1131E+08	.8127E-05	.1046E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.
3	0.
4	0.

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1000E+08	.7850E-07	.6540E-15
2	.1308E-21	.6298E-07	.3000E+07	.3738E-07	.3924E-15
3	.1962E-21	.7209E-07	.1000E+07	.1633E-07	.1962E-15
4	.2616E-21	.7935E-07	.3000E+06	.5934E-08	.7848E-16
5	.3270E-21	.8548E-07	.1000E+06	.2295E-08	.3270E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9401E-22	.5509E-07	.1440E+08	.1484E-06	.1354E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	0.
2	0.
3	0.
4	0.

TIME = .5000E-01 SECONDS

NO.	PARTICLE VOLUME U CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3862E+08	.1001E-05	.1516E-13
2	.5232E-21	.9997E-07	.3353E+08	.1053E-05	.1754E-13
3	.6540E-21	.1077E-06	.3004E+08	.1094E-05	.1965E-13
4	.1646E-20	.1465E-06	.1986E+08	.1285E-05	.3138E-13
5	.4142E-20	.1993E-06	.1209E+08	.1509E-05	.5010E-13
6	.1042E-19	.2710E-06	.7673E+07	.1771E-05	.7999E-13
7	.2624E-19	.3687E-06	.4867E+07	.2078E-05	.1277E-12
8	.6603E-19	.5015E-06	.3087E+07	.2439E-05	.2038E-12
9	.1662E-18	.6821E-06	.1958E+07	.2862E-05	.3254E-12
10	.4182E-18	.9278E-06	.1242E+07	.3359E-05	.5194E-12
11	.1053E-17	.1262E-05	.7877E+06	.3941E-05	.8291E-12
12	.2649E-17	.1717E-05	.4996E+06	.4625E-05	.1323E-11
13	.6666E-17	.2335E-05	.3169E+06	.5428E-05	.2112E-11
14	.1678E-16	.3176E-05	.2010E+06	.6370E-05	.3371E-11
15	.4222E-16	.4320E-05	.1275E+06	.7476E-05	.5380E-11
16	.1063E-15	.5877E-05	.8089E+05	.8774E-05	.8587E-11
17	.2674E-15	.7994E-05	.5132E+05	.1030E-04	.1371E-10
18	.6730E-15	.1087E-04	.3256E+05	.1208E-04	.2188E-10
19	.1694E-14	.1479E-04	.2066E+05	.1418E-04	.3492E-10
20	.4263E-14	.2012E-04	.1311E+05	.1664E-04	.5573E-10
21	.1073E-13	.2736E-04	.8317E+04	.1953E-04	.8893E-10
22	.2700E-13	.3722E-04	.5277E+04	.2292E-04	.1419E-09
23	.7300E-13	.5185E-04	.3348E+04	.2690E-04	.2265E-09
24	.2000E-12	.7256E-04	.2124E+04	.3157E-04	.3615E-09
25	.5240E-12	.1000E-03	.1348E+04	.3705E-04	.5768E-09

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3602E+08	.1028E-05	.1632E-13
2	.5860E-21	.1038E-06	.3173E+08	.1073E-05	.1856E-13
3	.1038E-20	.1256E-06	.2394E+08	.1186E-05	.2483E-13
4	.2611E-20	.1708E-06	.1518E+08	.1392E-05	.3964E-13
5	.6571E-20	.2324E-06	.9633E+07	.1634E-05	.6330E-13
6	.1654E-19	.3161E-06	.6110E+07	.1918E-05	.1011E-12
7	.4162E-19	.4300E-06	.3876E+07	.2251E-05	.1613E-12
8	.1047E-18	.5849E-06	.2458E+07	.2642E-05	.2575E-12
9	.2636E-18	.7955E-06	.1559E+07	.3100E-05	.4110E-12
10	.6635E-18	.1082E-05	.9898E+06	.3641E-05	.6567E-12
11	.1670E-17	.1472E-05	.6242E+06	.4249E-05	.1042E-11
12	.4202E-17	.2002E-05	.4091E+06	.5152E-05	.1719E-11
13	.1058E-16	.2723E-05	.1963E+06	.4573E-05	.2076E-11
14	.2662E-16	.3704E-05	.3835E+05	.1653E-05	.1021E-11
15	.6698E-16	.5039E-05	.2647E+05	.2112E-05	.1773E-11
16	.1686E-15	.6854E-06	.2857E+05	.4217E-05	.4817E-11
17	.4243E-15	.9323E-05	.2123E+05	.5796E-05	.9006E-11
18	.1068E-14	.1268E-04	.1074E+05	.5424E-05	.1146E-10
19	.2687E-14	.1725E-04	.4250E+04	.3973E-05	.1142E-10
20	.6763E-14	.2346E-04	.1132E+04	.1958E-05	.7657E-11
21	.1702E-13	.3191E-04	.4639E+03	.1484E-05	.7895E-11
22	.4440E-13	.4393E-04	.1460E+03	.8791E-06	.6437E-11
23	.1208E-12	.6134E-04	.4157E+02	.4913E-06	.6028E-11
24	.3237E-12	.8519E-04	.1229E+02	.2803E-06	.3980E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9280E-18	.2399E-06	.1130E+08	.8127E-05	.1046E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.4293E-17
2	.1263E-15
3	-.2665E-20
4	-.3197E-22

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION U CC/CC
1	.6540E-22	.4999E-07	.1043E+08	.8186E-07	.6820E-15
2	.1308E-21	.6298E-07	.2987E+07	.3722E-07	.3907E-15
3	.1962E-21	.7209E-07	.9970E+06	.1628E-07	.1956E-15
4	.2616E-21	.7935E-07	.2994E+06	.5922E-08	.7832E-16
5	.3270E-21	.8548E-07	.9986E+05	.2292E-08	.3265E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9312E-22	.5493E-07	.1481E+08	.1436E-06	.1379E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.3270E-16
2	.2926E-20
3	-.4314E-18
4	-.9788E-18

TIME = .5000E+00 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3788E+08	.9819E-06	.1487E-13
2	.5832E-21	.9997E-07	.3305E+08	.1038E-05	.1729E-13
3	.6540E-21	.1077E-06	.2964E+08	.1080E-05	.1939E-13
4	.1646E-20	.1465E-06	.1891E+08	.1275E-05	.3113E-13
5	.4142E-20	.1993E-06	.1204E+08	.1502E-05	.4987E-13
6	.1042E-19	.2710E-06	.7652E+07	.1766E-05	.7977E-13
7	.2624E-19	.3687E-06	.4860E+07	.2075E-05	.1275E-12
8	.6603E-19	.5015E-06	.3085E+07	.2437E-05	.2037E-12
9	.1662E-18	.6821E-06	.1957E+07	.2861E-05	.3253E-12
10	.4182E-18	.9278E-06	.1242E+07	.3359E-05	.5194E-12
11	.1053E-17	.1262E-05	.7878E+06	.3942E-05	.8292E-12
12	.2649E-17	.1717E-05	.4997E+06	.4626E-05	.1324E-11
13	.6666E-17	.2335E-05	.3170E+06	.5430E-05	.2113E-11
14	.1678E-16	.3176E-05	.8905E+05	.2822E-05	.1494E-11
15	.4222E-16	.4320E-05	.2691E+05	.1578E-05	.1136E-11
16	.1063E-15	.5877E-05	.2825E+05	.3065E-05	.3002E-11
17	.2674E-15	.7994E-05	.2629E+05	.5276E-05	.7030E-11
18	.6730E-15	.1087E-04	.1539E+05	.5717E-05	.1036E-10
19	.1694E-14	.1479E-04	.7174E+04	.4930E-05	.1215E-10
20	.4263E-14	.2012E-04	.2168E+04	.2756E-05	.9242E-11
21	.1073E-13	.2736E-04	.7236E+03	.1702E-05	.7763E-11
22	.2700E-13	.3722E-04	.2704E+03	.1177E-05	.7301E-11
23	.7300E-13	.5185E-04	.7911E+02	.6682E-06	.5775E-11
24	.2000E-12	.7256E-04	.2147E+02	.3550E-06	.4293E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3542E+08	.1011E-05	.1605E-13
2	.5850E-21	.1038E-06	.3130E+08	.1059E-05	.1831E-13
3	.1038E-20	.1256E-06	.2367E+08	.1173E-05	.2456E-13
4	.2611E-20	.1708E-06	.1509E+08	.1384E-05	.3941E-13
5	.6571E-20	.2324E-06	.9598E+07	.1628E-05	.6307E-13
6	.1654E-19	.3161E-06	.6098E+07	.1914E-05	.1008E-12
7	.4162E-19	.4300E-06	.3871E+07	.2249E-05	.1611E-12
8	.1047E-18	.5849E-06	.2457E+07	.2640E-05	.2574E-12
9	.2636E-18	.7955E-06	.1559E+07	.3099E-05	.4109E-12
10	.6635E-18	.1082E-05	.9898E+06	.3641E-05	.6567E-12
11	.1670E-17	.1472E-05	.6244E+06	.4250E-05	.1042E-11
12	.4202E-17	.2002E-05	.4092E+06	.5153E-05	.1720E-11
13	.1058E-16	.2723E-05	.1964E+06	.4576E-05	.2077E-11
14	.2662E-16	.3704E-05	.3841E+05	.1656E-05	.1022E-11
15	.6698E-16	.5039E-05	.2650E+05	.2113E-05	.1775E-11
16	.1686E-15	.6854E-05	.2859E+05	.4218E-05	.4819E-11
17	.4243E-15	.9323E-05	.2123E+05	.5797E-05	.9008E-11
18	.1068E-14	.1268E-04	.1074E+05	.5425E-05	.1147E-10
19	.2687E-14	.1725E-04	.4251E+04	.3973E-05	.1142E-10
20	.6763E-14	.2346E-04	.1132E+04	.1958E-05	.7658E-11
21	.1702E-13	.3191E-04	.4639E+03	.1484E-05	.7895E-11
22	.4440E-13	.4393E-04	.1450E+03	.8791E-06	.6437E-11
23	.1208E-12	.6134E-04	.4157E+02	.4913E-06	.5022E-11
24	.3237E-12	.8519E-04	.1229E+02	.2803E-06	.3980E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9339E-18	.2408E-06	.1121E+08	.8123E-05	.1047E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.4293E-16
2	.1263E-14
3	-.2828E-19
4	-.3389E-21

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.1415E+08	.1111E-06	.9253E-15
2	.1308E-21	.6298E-07	.2878E+07	.3586E-07	.3764E-15
3	.1962E-21	.7209E-07	.9712E+06	.1586E-07	.1905E-15
4	.2616E-21	.7936E-07	.2943E+06	.5821E-08	.7698E-16
5	.3270E-21	.8548E-07	.9869E+05	.2265E-08	.3227E-16
	MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
	.8708E-22	.5385E-07	.1839E+08	.1709E-06	.1602E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.3270E-15
2	.2926E-19
3	-.4959E-17
4	-.1185E-16

TIME = .2000E+01 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3537E+08	.9169E-06	.1388E-13
2	.5232E-21	.9997E-07	.3152E+08	.9898E-06	.1649E-13
3	.6540E-21	.1077E-06	.2839E+08	.1035E-05	.1857E-13
4	.1646E-20	.1465E-06	.1842E+08	.1242E-05	.3032E-13
5	.4142E-20	.1993E-06	.1186E+08	.1479E-05	.4911E-13
6	.1042E-19	.2710E-06	.7584E+07	.1750E-05	.7906E-13
7	.2624E-19	.3687E-06	.4835E+07	.2065E-05	.1269E-12
8	.6603E-19	.5015E-06	.3076E+07	.2430E-05	.2031E-12
9	.1662E-18	.6821E-06	.1955E+07	.2858E-05	.3249E-12
10	.4182E-18	.9278E-06	.1242E+07	.3358E-05	.5193E-12
11	.1053E-17	.1262E-05	.7882E+06	.3944E-05	.8296E-12
12	.2649E-17	.1717E-05	.5001E+06	.4630E-05	.1325E-11
13	.6666E-17	.2335E-05	.3174E+06	.5437E-05	.2116E-11
14	.1678E-16	.3176E-05	.8934E+05	.2831E-05	.1499E-11
15	.4222E-16	.4320E-05	.2703E+05	.1585E-05	.1141E-11
16	.1063E-15	.5877E-05	.2830E+05	.3071E-05	.3008E-11
17	.2674E-15	.7994E-05	.2631E+05	.5281E-05	.7035E-11
18	.6730E-15	.1087E-04	.1540E+05	.5719E-05	.1036E-10
19	.1694E-14	.1479E-04	.7176E+04	.4931E-05	.1215E-10
20	.4263E-14	.2012E-04	.2168E+04	.2757E-05	.9244E-11
21	.1073E-13	.2736E-04	.7236E+03	.1702E-05	.7763E-11
22	.2700E-13	.3722E-04	.2704E+03	.1177E-05	.7302E-11
23	.7300E-13	.5185E-04	.7911E+02	.6683E-06	.5775E-11
24	.2000E-12	.7256E-04	.2147E+02	.3550E-06	.4293E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3348E+08	.9550E-06	.1517E-13
2	.5850E-21	.1038E-06	.2995E+08	.1013E-05	.1752E-13
3	.1038E-20	.1256E-06	.2282E+08	.1131E-05	.2368E-13
4	.2611E-20	.1708E-06	.1481E+08	.1358E-05	.3867E-13
5	.6571E-20	.2324E-06	.9482E+07	.1609E-05	.6231E-13
6	.1654E-19	.3161E-06	.6058E+07	.1902E-05	.1002E-12
7	.4162E-19	.4300E-06	.3857E+07	.2240E-05	.1605E-12
8	.1047E-18	.5849E-06	.2453E+07	.2636E-05	.2569E-12
9	.2636E-18	.7955E-06	.1558E+07	.3097E-05	.4107E-12
10	.6635E-18	.1082E-05	.9901E+06	.3642E-05	.6569E-12
11	.1670E-17	.1472E-05	.6248E+06	.4252E-05	.1043E-11
12	.4202E-17	.2002E-05	.4096E+06	.5158E-05	.1721E-11
13	.1058E-16	.2723E-05	.1967E+06	.4584E-05	.2081E-11
14	.2662E-16	.3704E-05	.3861E+05	.1664E-05	.1028E-11
15	.6698E-16	.5039E-05	.2657E+05	.2120E-05	.1780E-11
16	.1686E-15	.6854E-05	.2862E+05	.4224E-05	.4825E-11
17	.4243E-15	.9323E-05	.2124E+05	.5801E-05	.9013E-11
18	.1068E-14	.1268E-04	.1074E+05	.5427E-05	.1147E-10
19	.2687E-14	.1725E-04	.4251E+04	.3974E-05	.1142E-10
20	.6763E-14	.2346E-04	.1132E+04	.1959E-05	.7669E-11
21	.1702E-13	.3191E-04	.4639E+03	.1484E-05	.7895E-11
22	.4440E-13	.4393E-04	.1450E+03	.8791E-06	.6437E-11
23	.1208E-12	.6134E-04	.4157E+02	.4913E-06	.5822E-11
24	.3237E-12	.8519E-04	.1229E+02	.2803E-06	.3980E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9604E-18	.2440E-06	.1000E+08	.8109E-05	.1047E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.1717E-15
2	.5053E-14
3	-.1256E-18
4	-.1499E-20

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.2490E+08	.1955E-06	.1629E-14
2	.1308E-21	.6298E-07	.2610E+07	.3253E-07	.3414E-15
3	.1962E-21	.7209E-07	.8988E+06	.1468E-07	.1763E-15
4	.2616E-21	.7935E-07	.2811E+06	.5569E-08	.7353E-16
5	.3270E-21	.8548E-07	.9587E+05	.2201E-08	.3135E-16

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.7820E-22	.5226E-07	.2879E+08	.2504E-06	.2251E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.1308E-14
2	.1170E-18
3	-.2729E-16
4	-.7231E-16

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.6086E+08	.4778E-06	.3981E-14
2	.1308E-21	.6298E-07	.6813E+07	.8490E-07	.8912E-15
3	.1962E-21	.7209E-07	.1942E+07	.3171E-07	.3810E-15
4	.2616E-21	.7935E-07	.7714E+06	.1526E-07	.2018E-15
5	.3270E-21	.8548E-07	.3688E+06	.8465E-08	.1206E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.7879E-22	.5235E-07	.7076E+08	.6181E-06	.5575E-14

TIME = .5000E+01 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3569E+08	.9251E-06	.1400E-13
2	.5232E-21	.9997E-07	.2981E+08	.9359E-06	.1560E-13
3	.6540E-21	.1077E-06	.2661E+08	.9697E-06	.1741E-13
4	.1046E-20	.1465E-06	.1763E+08	.1188E-05	.2901E-13
5	.4142E-20	.1993E-06	.1155E+08	.1441E-05	.4785E-13
6	.1042E-19	.2710E-06	.7471E+07	.1724E-05	.7788E-13
7	.2624E-19	.3687E-06	.4796E+07	.2048E-05	.1258E-12
8	.6603E-19	.5015E-06	.3064E+07	.2421E-05	.2023E-12
9	.1662E-18	.6821E-06	.1952E+07	.2854E-05	.3244E-12
10	.4182E-18	.9278E-06	.1242E+07	.3359E-05	.5194E-12
11	.1053E-17	.1262E-05	.7893E+06	.3958E-05	.8308E-12
12	.2649E-17	.1717E-05	.5011E+06	.4639E-05	.1327E-11
13	.6666E-17	.2335E-05	.3183E+06	.5451E-05	.2122E-11
14	.1678E-16	.3176E-05	.8995E+05	.2851E-05	.1509E-11
15	.4222E-16	.4320E-05	.2727E+05	.1599E-05	.1151E-11
16	.1063E-15	.5877E-05	.2841E+05	.3083E-05	.3019E-11
17	.2674E-15	.7994E-05	.2635E+05	.5290E-05	.7048E-11
18	.6730E-15	.1087E-04	.1541E+05	.5725E-05	.1037E-10
19	.1694E-14	.1479E-04	.7180E+04	.4934E-05	.1216E-10
20	.4263E-14	.2012E-04	.2169E+04	.2758E-05	.9247E-11
21	.1073E-13	.2736E-04	.7237E+03	.1702E-05	.7764E-11
22	.2700E-13	.3722E-04	.2705E+03	.1177E-05	.7302E-11
23	.7300E-13	.5185E-04	.7912E+02	.6683E-06	.5775E-11
24	.2000E-12	.7256E-04	.2147E+02	.3559E-06	.4293E-11
25	.5240E-12	.1000E-03	.7862E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3257E+08	.9292E-06	.1476E-13
2	.5850E-21	.1038E-06	.2808E+08	.9498E-06	.1643E-13
3	.1038E-20	.1256E-06	.2158E+08	.1069E-05	.2239E-13
4	.2611E-20	.1708E-06	.1432E+08	.1313E-05	.3738E-13
5	.6571E-20	.2324E-06	.9296E+07	.1577E-05	.6109E-13
6	.1654E-19	.3161E-06	.5991E+07	.1881E-05	.9908E-13
7	.4162E-19	.4300E-06	.3834E+07	.2227E-05	.1596E-12
8	.1047E-18	.5849E-06	.2446E+07	.2629E-05	.2562E-12
9	.2636E-18	.7955E-06	.1557E+07	.3096E-05	.4105E-12
10	.6635E-18	.1082E-05	.9910E+06	.3646E-05	.6575E-12
11	.1670E-17	.1472E-05	.6259E+06	.4260E-05	.1045E-11
12	.4202E-17	.2002E-05	.4105E+06	.5170E-05	.1725E-11
13	.1058E-16	.2723E-05	.1975E+06	.4602E-05	.2089E-11
14	.2662E-16	.3704E-05	.3902E+05	.1682E-05	.1039E-11
15	.6698E-16	.5039E-05	.2672E+05	.2132E-05	.1790E-11
16	.1686E-15	.6854E-05	.2870E+05	.4235E-05	.4838E-11
17	.4243E-15	.9323E-05	.2127E+05	.5808E-05	.9024E-11
18	.1068E-14	.1268E-04	.1075E+05	.5431E-05	.1148E-10
19	.2687E-14	.1725E-04	.4253E+04	.3975E-05	.1143E-10
20	.6763E-14	.2346E-04	.1133E+04	.1959E-05	.7681E-11
21	.1702E-13	.3191E-04	.4639E+03	.1484E-05	.7896E-11
22	.4440E-13	.4383E-04	.1458E+03	.8792E-06	.6437E-11
23	.1208E-12	.6134E-04	.4156E+02	.4913E-06	.5022E-11
24	.3237E-12	.8519E-04	.1229E+02	.2803E-06	.3980E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.9950E-18	.2477E-06	.1053E+08	.8095E-05	.1048E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.4293E-15
2	.1263E-13
3	-.1256E-18
4	-.1499E-20

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.6129E+08	.4811E-06	.4008E-14
2	.1308E-21	.6298E-07	.6959E+07	.8672E-07	.9103E-15
3	.1962E-21	.7209E-07	.2000E+07	.3266E-07	.3925E-15
4	.2616E-21	.7935E-07	.7949E+06	.1572E-07	.2080E-15
5	.3270E-21	.8548E-07	.3748E+06	.8603E-08	.1226E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.7899E-22	.5239E-07	.7142E+08	.6248E-06	.5641E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.3270E-14
2	.2926E-18
3	-.2729E-16
4	-.7231E-16

TIME = .1000E+02 SECONDS

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER DISTRIBUTION N(LOG(D)) 1/CC	SURFACE AREA DISTRIBUTION S(LOG(D)) CM**2/CC	VOLUME DISTRIBUTION V(LOG(D)) CC/CC
1	.3924E-21	.9083E-07	.3643E+08	.9442E-06	.1429E-13
2	.5232E-21	.9997E-07	.2769E+08	.8694E-06	.1449E-13
3	.6540E-21	.1077E-06	.2402E+08	.8754E-06	.1571E-13
4	.1646E-20	.1465E-06	.1637E+08	.1103E-05	.2694E-13
5	.4142E-20	.1993E-06	.1105E+08	.1379E-05	.4579E-13
6	.1042E-19	.2710E-06	.7282E+07	.1681E-05	.7592E-13
7	.2624E-19	.3687E-06	.4730E+07	.2020E-05	.1241E-12
8	.6603E-19	.5015E-06	.3043E+07	.2404E-05	.2009E-12
9	.1662E-18	.6821E-06	.1948E+07	.2847E-05	.3236E-12
10	.4182E-18	.9278E-06	.1243E+07	.3361E-05	.5197E-12
11	.1053E-17	.1262E-05	.7912E+06	.3959E-05	.8327E-12
12	.2649E-17	.1717E-05	.5028E+06	.4655E-05	.1332E-11
13	.6666E-17	.2335E-05	.3197E+06	.5476E-05	.2131E-11
14	.1678E-16	.3176E-05	.9099E+05	.2884E-05	.1527E-11
15	.4222E-16	.4320E-05	.2768E+05	.1623E-05	.1169E-11
16	.1063E-15	.5877E-05	.2860E+05	.3103E-05	.3039E-11
17	.2674E-15	.7994E-05	.2643E+05	.5305E-05	.7068E-11
18	.6730E-15	.1087E-04	.1544E+05	.5734E-05	.1039E-10
19	.1694E-14	.1479E-04	.7186E+04	.4938E-05	.1217E-10
20	.4263E-14	.2012E-04	.2171E+04	.2760E-05	.9253E-11
21	.1073E-13	.2736E-04	.7239E+03	.1703E-05	.7766E-11
22	.2700E-13	.3722E-04	.2705E+03	.1177E-05	.7303E-11
23	.7300E-13	.5185E-04	.7912E+02	.6683E-06	.5776E-11
24	.2000E-12	.7256E-04	.2147E+02	.3550E-06	.4293E-11
25	.5240E-12	.1000E-03	.7863E+01	.2471E-06	.4120E-11

INTERPOLATED DISTRIBUTION

1	.4531E-21	.9529E-07	.3206E+08	.9145E-06	.1452E-13
2	.5850E-21	.1038E-06	.2586E+08	.8746E-06	.1512E-13
3	.1038E-20	.1256E-06	.2020E+08	.1001E-05	.2095E-13
4	.2611E-20	.1708E-06	.1371E+08	.1257E-05	.3580E-13
5	.6571E-20	.2324E-06	.9169E+07	.1556E-05	.6025E-13
6	.1654E-19	.3161E-06	.6006E+07	.1885E-05	.9933E-13
7	.4162E-19	.4300E-06	.3886E+07	.2257E-05	.1618E-12
8	.1047E-18	.5849E-06	.2495E+07	.2681E-05	.2614E-12
9	.2636E-18	.7955E-06	.1595E+07	.3171E-05	.4205E-12
10	.6635E-18	.1082E-05	.1017E+07	.3741E-05	.6747E-12
11	.1670E-17	.1472E-05	.6470E+06	.4403E-05	.1080E-11
12	.4202E-17	.2002E-05	.4112E+06	.5179E-05	.1728E-11
13	.1058E-16	.2723E-05	.2053E+06	.4784E-05	.2172E-11
14	.2662E-16	.3704E-05	.5934E+05	.2558E-05	.1579E-11
15	.6698E-16	.5039E-05	.2814E+05	.2245E-05	.1885E-11
16	.1686E-15	.6854E-05	.2751E+05	.4060E-05	.4638E-11
17	.4243E-15	.9323E-05	.2093E+05	.5716E-05	.8881E-11
18	.1068E-14	.1268E-04	.1131E+05	.5715E-05	.1208E-10
19	.2687E-14	.1725E-04	.4678E+04	.4373E-05	.1257E-10
20	.6763E-14	.2346E-04	.1447E+04	.2503E-05	.9787E-11
21	.1702E-13	.3191E-04	.4972E+03	.1591E-05	.8462E-11
22	.4440E-13	.4393E-04	.1748E+03	.1060E-05	.7761E-11
23	.1208E-12	.6134E-04	.5029E+02	.5945E-06	.6077E-11
24	.3237E-12	.8519E-04	.1466E+02	.3344E-06	.4747E-11

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.1087E-17	.2549E-06	.1014E+08	.8367E-05	.1103E-10

VOLUME ADDED

MECHANISM	(CC/CC)
1	.8587E-15
2	.2526E-13
3	-.1256E-18
4	-.1499E-20

STEADY STATE

DISCRETE REGIME

NO.	PARTICLE VOLUME V CC	PARTICLE DIAMETER D CM	NUMBER CONCENTRATION N 1/CC	SURFACE AREA CONCENTRATION S CM**2/CC	VOLUME CONCENTRATION V CC/CC
1	.6540E-22	.4999E-07	.6111E+08	.4797E-06	.3997E-14
2	.1308E-21	.6298E-07	.6854E+07	.8541E-07	.8965E-15
3	.1962E-21	.7209E-07	.1944E+07	.3174E-07	.3814E-15
4	.2616E-21	.7935E-07	.7629E+06	.1509E-07	.1996E-15
5	.3270E-21	.8548E-07	.3554E+06	.8158E-08	.1162E-15

MEAN VOLUME CC	MEAN DIAMETER CM	TOTAL NUMBER 1/CC	TOTAL SURFACE AREA CM**2/CC	TOTAL VOLUME CC/CC
.7871E-22	.5234E-07	.7103E+08	.6201E-06	.5591E-14

VOLUME ADDED

MECHANISM	(CC/CC)
1	.6540E-14
2	.5852E-18
3	-.2729E-16
4	-.7231E-16

FIGURE 1

```
      SUBROUTINE BETA(NPTS,TIME,XVOLUM,YVOLUM,COEF)
C-----------------------------------------------------------------------
C*    THIS SUBROUTINE CALCULATES THE COAGULATION COEFFICIENTS BETA,     *
C*    AS A FUNCTION OF THE VOLUMES OF THE COAGULATING PARTICLES         *
C*                                                                      *
C*                              VARIABLES                               *
C*                                                                      *
C*    AKNUDX=KNUDSEN NUMBER OF FIRST PARTICLE                           *
C*    AKNUDY=KNUDSEN NUMBER OF SECOND PARTICLE                          *
C*    COEF=COAGULATION COEFFICIENT    (OUTPUT ARRAY IN CC/SEC)          *
C*    DENSTY=PARTICLE MATERIAL DENSITY (GRAMS/CC)                       *
C*    DIFX=DIFFUSIVITY OF FIRST PARTICLE  (CM**2/SEC)                   *
C*    DIFY=DIFFUSIVITY OF SECOND PARTICLE  (CM**2/SEC)                  *
C*    DX=DIAMETER OF FIRST PARTICLE  (CM)                               *
C*    DY=DIAMETER OF SECOND PARTICLE  (CM)                              *
C*    FREEMN=MEAN FREE PATH OF AIR (CENTIMETERS)                        *
C*    NPTS=NUMBER OF POINTS  (INPUT)                                    *
C*    TEMPK=TEMPERATURE (DEGREES KELVIN)                                *
C*    TIME=TIME  (INPUT IN SECONDS)                                     *
C*    VISCOS=VISCOSITY OF AIR  (POISE)                                  *
C*    XVOLUM=VOLUME OF FIRST PARTICLE  (INPUT IN CC)                    *
C*    YVOLUM=VOLUME OF SECOND PARTICLE  (INPUT ARRAY IN CC)             *
C*                                                                      *
C*    EXPRESSION TAKEN FROM FUCHS,N.A.,'THE MECHANICS OF AEROSOLS',     *
C*    PERGAMON PRESS,NEW YORK, 1964 PAGES 291-294.                      *
C-----------------------------------------------------------------------
      DIMENSION YVOLUM(1),COEF(1)
      COMMON/AERSL1/IPARM(10)
      DATA TEMPK,DENSTY,VISCOS,FREEMN/298.,1.,1.83E-4,.066E-4/
      IF(IPARM(3).EQ.1)GO TO 1
      IF(IPARM(3).EQ.2)GO TO 2
C
      DX=(1.90986*XVOLUM)**.33333333333
      AKNUDX=FREEMN*2./DX
      TKV=1.46E-17*TEMPK/VISCOS
      DIFX=(1.+AKNUDX*(1.257+.4*EXP(-1.1/AKNUDX)))*TKV/DX
      SPEEDX=3.51E-16*TEMPK/(XVOLUM*DENSTY)
      PMEANX=2.546479*DIFX/SQRT(SPEEDX)
      GX=DX+PMEANX
      GX1=DX*DX+PMEANX*PMEANX
      GX=(GX*GX*GX-GX1*SQRT(GX1))/(3.*DX*PMEANX)-DX
      GX=GX*GX
C
      DO 10 I=1,NPTS
      DY=(1.90986*YVOLUM(I))**.33333333333
      AKNUDY=FREEMN*2./DY
      DIFY=(1+AKNUDY*(1.257+.4*EXP(-1.1/AKNUDY)))*TKV/DY
      SPEEDY=SQRT(3.51E-16*TEMPK/(YVOLUM(I)*DENSTY))
      SPEED=SQRT(SPEEDX+SPEEDY*SPEEDY)
      PMEANY=2.546479*DIFY/SPEEDY
```

```
      GY=DY+PMEANY
      GY1=DY*DY+PMEANY*PMEANY
      GY=(GY*GY*GY-GY1*SQRT(GY1))/(3.*DY*PMEANY)-DY
      G=SQRT(GX+GY*GY)
      COEF(I)=(DX+DY)*.5
      COEF(I)=COEF(I)/(COEF(I)+G)+4.*(DIFX+DIFY)/(SPEED*COEF(I))
   10 COEF(I)=6.2832*(DIFX+DIFY)*(DX+DY)/COEF(I)
      RETURN
C
    1 DO 11 I=1,NPTS
   11 COEF(I)=XVOLUM-YVOLUM(I)
      RETURN
C
    2 DO 12 I=1,NPTS
   12 COEF(I)=0.
      RETURN
      END
```

FIGURE 2

```
      FUNCTION BOUNDR(TIME)
C-----------------------------------------------------------------------
C*       THIS IS AN EXAMPLE OF A BOUNDARY SOURCE FUNCTION.             *
C*                                                                     *
C*                    VARIABLES                                        *
C*                                                                     *
C*     BOUNDR=SOURCE AT BOUNDARY (PARTICLE VOLUME=VA) (1/CC/SEC/CC/)   *
C*     TOUT(I)=I-TH OUTPUT TIME (SECONDS)                              *
C*     VA=LOWER LIMIT OF CONTINUOUS DISTRIBUTION IN PARTICLE VOLUME (CC)*
C-----------------------------------------------------------------------
      COMMON/AERSL6/TOUT(16),TDUMY,VA,VB,VBOVA,ALGVBA
      BOUNDR=.3
      IF(TIME.GT.TOUT(2))BOUNDR=BOUNDR*EXP(.0005*(TOUT(2)-TIME))
      RETURN
      END
```

FIGURE 3

```
      SUBROUTINE CSOURC(NPTS,TIME,V,DISTV,SOURCE,REMOVE)
C-----------------------------------------------------------------------
C*    THIS IS AN EXAMPLE OF A SOURCE AND/OR REMOVAL SUBROUTINE IN THE  *
C*    CONTINUOUS REGIME                                                *
C*                                                                     *
C*                    VARIABLES                                        *
C*                                                                     *
C*    DISTV(I)=THE DISTRIBUTION FUNCTION OF PARTICLE VOLUME OF THE I-TH*
C*      PARTICLE SIZE  (INPUT ARRAY IN  1/CC/CC)                       *
C*    GLSIG=NATURAL LOGARITHM OF THE GEOMETRIC STANDARD DEVIATION      *
C*    GMEAN=GEOMETRIC MEAN VOLUME  (CC)                                *
C*    REMOVE(J,I)=THE J-TH REMOVAL TERM  FOR THE I-TH PARTICLE SIZE    *
C*                (OUTPUT ARRAY IN 1/CC/SEC/CC)                        *
C*    SOURCE(J,I)=THE J-TH SOURCE TERM  FOR THE I-TH PARTICLE SIZE     *
C*                (OUTPUT ARRAY IN 1/CC/SEC/CC)                        *
C*    TIME=TIME  (INPUT IN SEC)                                        *
C*    TOT=NUMBER PER CC                                                *
C*    V(I)=I-TH PARTICLE VOLUME  (INPUT ARRAY IN CC)                   *
C-----------------------------------------------------------------------
      DIMENSION V(1),DISTV(1),SOURCE(3,1),REMOVE(3,1)
      ALNORM(TOT,GMEAN,GLSIG)=.3989*TOT*EXP(-.5*(ALOG(V(I)/GMEAN)/
     $  GLSIG)**2)/(V(I)*GLSIG)
      DO 1 I=1,NPTS
      SOURCE(1,I)=ALNORM(100.4.08E-19,1.22)
      SOURCE(2,I)=ALNORM(1.E2,5.E-18,1.8)
      REMOVE(1,I)=-5.E6*V(I)*EXP(-.005*TIME)*DISTV(I)
    1 REMOVE(2,I)=-6.E4*V(I)*EXP(-.01*TIME)*DISTV(I)
      RETURN
      END
```

FIGURE 4

```
      SUBROUTINE DSOURC(NPTS,TIME,CLSCON,SOURCE,REMOVE)
C-----------------------------------------------------------------------
C*    THIS IS AN EXAMPLE OF A SOURCE AND/OR REMOVAL SUBROUTINE IN THE  *
C*    THE DISCRETE REGIME                                              *
C*                                                                     *
C*                      VARIABLES                                      *
C*                                                                     *
C*    CLSCON(I)=I-TH CLUSTER CONCENTRATION  (INPUT IN 1/CC)            *
C*    I=CLUSTER NUMBER  (INPUT)                                        *
C*    REMOVE(J,I)=THE J-TH REMOVAL TERM FOR THE I-TH CLUSTER (OUTPUT   *
C*      ARRAY IN 1/SEC/CC)                                             *
C*    SOURCE(J,I)=THE J-TH SOURCE TERM FOR THE I-TH CLUSTER  (OUTPUT   *
C*      ARRAY IN 1/SEC/CC)                                             *
C*    TIME=TIME  (INPUT IN SEC)                                        *
C-----------------------------------------------------------------------
      DIMENSION CLSCON(1),SOURCE(3,1),REMOVE(3,1)
      DO 1 I=1,NPTS
      REMOVE(1,I)=-1.E-2*CLSCON(I)
      REMOVE(2,I)=-1.E-1*EXP(-FLOAT(I))*CLSCON(I)*EXP(-.01*TIME)
      SOURCE(1,I)=0.
      SOURCE(2,I)=1.E3*EXP(-FLOAT(I))
      IF(I.GT.1)GO TO 1
      SOURCE(1,I)=1.0E7
    1 CONTINUE
      RETURN
      END
```

FIGURE 6

```
      SUBROUTINE GROWTH(NPTS,TIME,V,RATE,PARTAL)
C-----------------------------------------------------------------------
C*     THIS IS AN EXAMPLE OF A GROWTH SUBROUTINE USING THE CONTINUUM    *
C*     GROWTH LAW. (REF. GELBARD,F. AND SEINFELD,J.H.,JOURNAL OF        *
C*     COLLOID AND INTERFACE SCIENCE, VOL.68,PAGES 173-183 (1979))      *
C*                                                                      *
C*                    VARIABLES                                         *
C*                                                                      *
C*     D=PARTICLE DIAMETER  (CM)                                        *
C*     DIFUS=MOLECULAR DIFFUSIVITY  (CM**2/SECOND)                      *
C*     DEL=CONCENTRATION DIFFERENCE  (1/CC)                             *
C*     NPTS=NUMBER OF POINTS  (INPUT)                                   *
C*     PARTAL=PARTIAL OF RATE W.R.T. PARTICLE VOLUME (OUTPUT IN 1/SEC)  *
C*     RATE=GROWTH RATE OF A PARTICLE OF VOLUME V (OUTPUT IN CC/SEC)    *
C*     V=PARTICLE VOLUME (INPUT IN CC)                                  *
C*     VMOLEC=MOLECULAR VOLUME  (CC)                                    *
C-----------------------------------------------------------------------
      DIMENSION V(1),RATE(1),PARTAL(1)
      COMMON/AERSL1/IPARM(10)
      DATA PI,DIFUS,VMOLEC/3.14159,.1,6.54E-23/
      DEL=1.E8*EXP(-.001*TIME)
      DO 1 I=1,NPTS
      D=(1.9099*V(I))**.33333333333
      RATE(I)=2.*PI*D*DIFUS*DEL*VMOLEC
      PARTAL(I)=RATE(I)/(3.*V(I))
    1 IF(IPARM(3).EQ.1)RATE(I)=-2.*RATE(I)
      RETURN
      END
```

FIGURE 5

```
      SUBROUTINE EVAP(NPTS,TIME,V,COEF)
C-----------------------------------------------------------------------
C*     THIS IS AN EXAMPLE OF A EVAPORATION FUNCTION SUBROUTINE          *
C*    REFS. SKINNER,L.M. AND SAMBLES,J.R., 'THE KELVIN EQUATION - A     *
C*    REVIEW', J. AEROSOL SCIENCE, VOL. 3, PP. 199-210 (1972) AND       *
C*    FRIEDLANDER,S.K., 'SMOKE, DUST AND HAZE', P.229, JOHN WILEY AND   *
C*    SONS, NEW YORK (1977)                                             *
C*                                                                      *
C*                      VARIABLES                                       *
C*                                                                      *
C*    BOLTZ=BOLTZMANN'S CONSTANT  (ERG/DEG K)                           *
C*    COEF(I)=EVAPORATION COEFFICIENT  (OUTPUT ARRAY IN 1/SEC)          *
C*    D=PARTICLE DIAMETER  (CM)                                         *
C*    EQNUM=EQUILIBRIUM NUMBER CONCENTRATION  (1/CC)                    *
C*    NPTS=NUMBER OF POINTS  (INPUT)                                    *
C*    SURTEN=SURFACE TENSION  (DYNES/CM)                                *
C*    TEMPK=TEMPERATURE  (DEG K)                                        *
C*    TIME=TIME  (INPUT IN SEC)                                         *
C*    V(I)=PARTICLE VOLUME  (INPUT ARRAY IN CC)                         *
C*    VMOLEC=MOLECULAR VOLUME  (CC)                                     *
C-----------------------------------------------------------------------
      DIMENSION V(1),COEF(1)
      COMMON/AERSL1/IPARM(10)
      DATA SURTEN,VMOLEC,BOLTZ,TEMPK,EQNUM/70.,6.54E-23,1.38E-16,298.
     $,1.E6/
C
      DO 1 I=1,NPTS
      COEF(I)=0.
      IF(IPARM(1).EQ.1)GO TO 1
      D=(1.9099*V(I))**.33333333333
      CALL BETA(1,TIME,VMOLEC,V(I)-VMOLEC,COEF(I))
      COEF(I)=COEF(I)*EQNUM*EXP(4.*SURTEN*VMOLEC/(D*BOLTZ*TEMPK))
    1 CONTINUE
      RETURN
      END
```

FIGURE 7

```
      SUBROUTINE XINTL(NPTS,V,DISTB)
C-----------------------------------------------------------------------
C*       THIS IS AN EXAMPLE OF AN INITIAL DISTRIBUTION FUNCTION.  A SUM *
C*     OF THREE LOG-NORMAL FUNCTIONS OR A LOGARITHMIC INTERPOLATION     *
C*     BETWEEN DATA POINTS CAN BE USED DEPENDING ON IPARM(2)            *
C*                                                                      *
C*                    VARIABLES                                         *
C*     DISTB=OUTPUT ARRAY OF INITIAL DISTRIBUTIONS  (NO./CC/CC)
C*     NPTS=NUMBER OF POINTS  (INPUT)                                   *
C*     V=INPUT ARRAY OF PARTICLE VOLUMES  (CC)                          *
C-----------------------------------------------------------------------
      DIMENSION DP(19),F(19),V(1),DISTB(1)
      COMMON/AERSL1/IPARM(10)
      DATA DP/.0133,.0237,.0421,.075,.133,.237,.42,.513,.61,.704,.784,
     $  .847,.902,.953,1.01,1.07,1.16,1.28,1.41/
      DATA F/2.38E7,5.68E6,2.76E5,1.7E5,3.54E4,2.1E3,1.9E2,70.7,24.8,
     $  13.9,10.5,7.78,5.9,4.57,3.22,2.36,1.58,.714,.705/
      DATA ICALL/0/
C
      ALNORM(TOT,GMEAN,GLSIG,VX)=.3989*TOT*EXP(-.5*(ALOG(VX/GMEAN)/
     $  GLSIG)**2)/(VX*GLSIG)
C
      IF(IPARM(2).EQ.1)GO TO 2
      DO 1 I=1,NPTS
    1 DISTB(I)=ALNORM(1.06E5,1.44E-18,1.76,V(I))+
     $  ALNORM(3.2E4,8.24E-17,2.31,V(I))+ALNORM(5.4,3.33E-13,2.38,V(I))
      RETURN
C
    2 IF(ICALL.EQ.1)GO TO 22
      ICALL=1
      DO 23 I=1,19
      DP(I)=ALOG(DP(I))
   23 F(I)=ALOG(F(I))
   22 DO 3 NP=1,NPTS
      D=(6.E12*V(NP)/3.14159)**(.333333333333)
      DL=ALOG(D)
      DO 24 I=2,19
      IF(DL.LT.DP(I))GO TO 25
   24 CONTINUE
   25 DL=F(I)+(DP(I)-DL)/(DP(I)-DP(I-1))*(F(I-1)-F(I))
    3 DISTB(NP)=EXP(DL)*D/(3.*V(NP))
      RETURN
      END
```

FIGURE 8

```
      SUBROUTINE DISTW(ISPLIN,NVARM1,NPTS,WX,ZDIST)
C-----------------------------------------------------------------------
C*    THIS ROUTINE COMPUTES THE VALUES OF THE M(WX,T) DISTRIBUTION      *
C*    BY INTERPOLATING FROM THE VALUES OF A AT THE GRID POINTS.         *
C*    NOTE THAT A(I)  IS EQUAL TO THE 'M' DISTRIBUTION FUNCTION AT W(I) *
C*                                                                      *
C*          VARIABLES                                                   *
C*                                                                      *
C*    M(WX,TIME)=N(X,TIME)*DERIVATIVE OF X WITH RESPECT TO WX           *
C*    NPTS=NUMBER OF POINTS IN WX ARRAY  (INPUT)                        *
C*    NVARM1=NUMBER OF GRID POINTS MINUS ONE  (INPUT)                   *
C*    WX=LN(X/XA)/LN(XB/XA)   (INPUT ARRAY)                             *
C*    X(I)=PARTICLE SIZE AT THE I-TH GRID POINT                         *
C*    XA=SMALLEST PARTICLE SIZE IN CONTINUOUS REGIME                    *
C*    XB=LARGEST PARTICLE SIZE IN CONTINUOUS REGIME                     *
C*    ZDIST(I)=ARRAY OF M(WX,TIME)   (OUTPUT)                           *
C*                                                                      *
C*    INTERPOLATION METHOD                                              *
C*       ISPLIN=0  CUBIC SPLINES                                        *
C*                  REF. GERALD,C.F.,'APPLIED NUMERICAL ANALYSIS',      *
C*                       PP.474-488, ADDISON-WESLEY 1978                *
C*                       ALSO CARNAHAN,B., LUTHER,H.A., AND WILKES,J.O.*
C*                       'APPLIED NUMERICAL METHODS',P.63,WILEY 1969    *
C*              1  LINEAR SPLINES                                       *
C*              2  LOGARITHMIC SPLINES (POWER LAW)                      *
C-----------------------------------------------------------------------
      DIMENSION WX(1),ZDIST(1)
      COMMON/AERSL2/A(60),X(60),W(40)
      COMMON/AERSL7/P(38)
C
      DELTA(J)=W(J+1)-W(J)
C
C        DETERMINE BOUNDING GRID POINTS OF WX ASSUMING THAT THE POINTS
C        WX(I),I=1,NPTS ARE IN ASCENDING ORDER
C
      JSTART=1
      DO 3 I=1,NPTS
      DO 25 J=JSTART,NVARM1
      IF(WX(I).LE.W(J+1))GO TO 20
   25 CONTINUE
      J=NVARM1
   20 IF(ISPLIN.EQ.1)GO TO 1
      IF(ISPLIN.EQ.2)GO TO 2
C
C             CUBIC SPLINES
C
      IF(J.EQ.1)GO TO 30
      IF(J.EQ.NVARM1) GO TO 40
      ZDIST(I)=(P(J-1)*(W(J+1)-WX(I))**3+P(J)*(WX(I)-W(J))**3+(6.*A(J+1)
     $  -DELTA(J)**2*P(J))*(WX(I)-W(J))+(6.*A(J)-DELTA(J)**2*P(J-1))
```

```
     $   *(W(J+1)-WX(I)))/(6.*DELTA(J))
         GO TO 3
    30   ZDIST(I)=(P(J)*(WX(I)-W(J))**3+(6.*A(J+1)-DELTA(J)**2*P(J))*
     $   (WX(I)-W(J))+6.*A(J)*(W(J+1)-WX(I)))/(6.*DELTA(J))
         GO TO 3
    40   ZDIST(I)=(P(J-1)*(W(J+1)-WX(I))**3+6.*A(J+1)*(WX(I)-W(J))+(6.*A(J)
     $   -DELTA(J)**2*P(J-1))*(W(J+1)-WX(I)))/(6.*DELTA(J))
         GO TO 3
C
C              LINEAR SPLINES
C
     1   ZDIST(I)=A(J+1)+(WX(I)-W(J+1))/(W(J)-W(J+1))*(A(J)-A(J+1))
         GO TO 3
C
C              LOGARITHMIC SPLINES
C
     2   ZDIST(I)=ALOG(A(J+1))
         ZDIST(I)=ZDIST(I)+(WX(I)-W(J+1))/(W(J)-W(J+1))*
     $   (ALOG(A(J))-ZDIST(I))
         ZDIST(I)=EXP(ZDIST(I))
     3   JSTART=J
         RETURN
         END
```

FIGURE 9

```
      SUBROUTINE SETUP(ISPLIN,NEWSET,NVAR)
C-----------------------------------------------------------------------
C*    THIS ROUTINE IS USED FOR DETERMINING THE SECOND DERIVATIVE OF    *
C*    THE DISTRIBUTION AT THE GRID POINTS BY SOLVING A SYSTEM OF LINEAR*
C*    ALGEBRAIC EQUATIONS WITH A TRI-DIAGONAL COEFFICIENT MATRIX.      *
C*    THE ROUTINE IS REQUIRED FOR A CUBIC SPLINE INTERPOLATION.        *
C*    REFERENCE; CARNAHAN,B., LUTHER,H.A. AND WILKES,J.O. 'APPLIED     *
C*    NUMERICAL METHODS,' JOHN WILEY AND SONS, PAGE 446 (1969)         *
C*                                                                     *
C*              VARIABLES                                              *
C*                                                                     *
C*    DIAG(I)=THE I-TH DIAGONAL ELEMENT OF THE MATRIX                  *
C*    ISPLIN=FLAG FOR SPLINE INTERPOLATION METHOD                      *
C*    NEWSET=FLAG TO INDICATE A NEW SET OF GRID POINTS                 *
C*           0=SAME SET OF GRID POINTS                                 *
C*           1=NEW SET OF GRID POINTS                                  *
C*    NVAR=NUMBER OF GRID POINTS   (INPUT)                             *
C*    P(I)=THE SECOND DERIVATIVE AT THE (I+1)-TH GRID POINT            *
C*    SUB(I)=THE (I-1)-TH SUB DIAGONAL ELEMENT OF THE MATRIX           *
C*    SUPER(I)=THE I-TH SUPER-DIAGONAL ELEMENT OF THE MATRIX           *
C-----------------------------------------------------------------------
      DIMENSION G(38),DIAG(38),SUB(38),SUPER(38)
      COMMON/AERSL2/A(60),X(60),W(40)
      COMMON/AERSL7/P(38)
C
      DELTA(I)=W(I+1)-W(I)
C
C        COMPUTE TRI-DIAGONAL MATRIX
C
      IF(NEWSET.EQ.0)GO TO 6
      NVARM2=NVAR-2
      NVARM3=NVARM2-1
      DO 1 I=1,NVARM2
      SUB(I)=DELTA(I)**2/6.
      SUPER(I)=DELTA(I)*DELTA(I+1)/6.
    1 DIAG(I)=2.*(SUB(I)+SUPER(I))
      DO 2 I=2,NVARM2
    2 DIAG(I)=DIAG(I)-SUB(I)*SUPER(I-1)/DIAG(I-1)
C
C        SOLVE THE LINEAR SYSTEM WITH THE TRI-DIAGONAL MATRIX
C
    6 DO 5 I=1,NVARM2
    5 P(I)=DELTA(I)*(A(I+2)-A(I+1))/DELTA(I+1)-A(I+1)+A(I)
      G(1)=P(1)/DIAG(1)
      DO 3 I=2,NVARM2
    3 G(I)=(P(I)-SUB(I)*G(I-1))/DIAG(I)
      P(NVARM2)=G(NVARM2)
      DO 4 J=1,NVARM3
      I=NVARM2-J
    4 P(I)=G(I)-SUPER(I)*P(I+1)/DIAG(I)
      RETURN
      END
```

FIGURE 10

```
      SUBROUTINE DERIVT(ISPLIN,NVAR,DERIV)
C-----------------------------------------------------------------------
C*    THIS ROUTINE CALCULATES THE DERIVATIVE OF THE 'M' DISTRIBUTION   *
C*    FUNCTION W.R.T. W, FOR THE NVAR GRID POINTS                      *
C*      REF. SEE REFERENCES TO ROUTINE DISTW                           *
C*                                                                     *
C*              VARIABLES                                              *
C*    A(I)='M' DISTRIBUTION AT W(I)                                    *
C*    DERIV=OUTPUT ARRAY OF DERIVATIVES AT GRID POINTS                 *
C*    ISPLIN=FLAG FOR SPLINE INTERPOLATION FORMULA                     *
C*    NVAR=NUMBER OF GRID POINTS  (INPUT)                              *
C*    W(I)=LOGARITHMICALLY TRANSFORMED PARTICLE SIZE AT THE I-TH GRID  *
C*      POINT                                                          *
C*    X(I)=PARTICLE SIZE AT THE I-TH GRID POINT                        *
C-----------------------------------------------------------------------
      DIMENSION DERIV(1)
      COMMON/AERSL2/A(60),X(60),W(40)
      COMMON/AERSL7/P(38)
C
      DELTA(I)=W(I+1)-W(I)
C
      NVARM1=NVAR-1
      NVARM2=NVAR-2
      DERIV(1)=(A(2)-A(1))/DELTA(1)-DELTA(1)*P(1)/6.
      DO 1 I=2,NVARM2
    1 DERIV(I)=(A(I+1)-A(I))/DELTA(I)-DELTA(I)*(2.*P(I-1)+P(I))/6.
      DERIV(NVARM1)=(A(NVAR)-A(NVARM1))/DELTA(NVARM1)-DELTA(NVARM1)*
     $  P(NVARM2)/3.
      DERIV(NVAR)=DERIV(NVARM1)+0.5*DELTA(NVARM1)*P(NVARM2)
      RETURN
      END
```

FOOTNOTES

1. In (1), n(x,t) was defined by

$$N_i = \int_{x_i - x_1/2}^{x_i + x_1/2} n(x,t)\, dx$$

With this definition the concept of the area under the distribution being proportional to the number concentration is more meaningful for small values of i. However, since it is easier to write the code using Eq. [4] and both definitions are virtually the same for i>>1, Eq. [4] is used as the defining equation for n(x,t).

2. The "sectional" technique (7), uses the lowest order interpolation formula, i.e., a constant.

REFERENCES

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NOTATION

Symbol	Meaning	Page First Referenced	Units
E_i	rate of monomer evaporation from an i-mer	6	s^{-1}
$I(x,t)$	net growth rate of particles of size x at time t	11	$cm^{-3}s^{-1}$
k	number of monomers in largest particle in the discrete regime	7	
$m(w,t)$	rescaled distribution function	12	cm^{-3}
N_i	number concentration of i-mers	6	cm^{-3}
$n(x,t)$	size distribution function for particles of size x at time t	7	cm^{-6}
$n(x_i,t)$	$= N_i/x_1$	7	cm^{-6}
$\bar{R}_i(N_i,t)$	removal rate of i-mers at time t	6	$cm^{-3}s^{-1}$
$R_i[n(x_i,t),t]$	$= \bar{R}_i(N_i,t)/x_1$	9	$cm^{-6}s^{-1}$
$R[n(x_i,t),x_i,t]$	$= \bar{R}_i(N_i,t)/x_1$	10	$cm^{-6}s^{-1}$
$\bar{S}_i(t)$	generation rate of i-mers at time t	6	$cm^{-3}s^{-1}$
$S_i(t)$	$= \bar{S}_i(t)/x_1$	9	$cm^{-6}s^{-1}$
$S(x_i,t)$	$= \bar{S}_i(t)/x_1$	10	$cm^{-6}s^{-1}$
t	time	6	s
w	logarithmically rescaled particle size	12	
w_a	smallest particle size in the continuous regime in terms of logarithmically rescaled particle size	12	
w_b	largest particle size in the continuous regime in terms of logarithmically rescaled particle size	12	
x	particle size	7	cm^3
x_a	smallest particle size in the continuous regime	12	cm^3

NOTATION

Symbol	Meaning	Page First Referenced	Units
REMOVE	array of removal rates	21	$cm^{-6}s^{-1}$
SOURCE	array of source rates	21	$cm^{-6}s^{-1}$
TIME	time	19	s
X	array of particle sizes	19	cm^{3}

Symbol	Meaning	Page First Referenced	Units
x_b	largest particle size in the continuous regime	12	cm^3
x_i	size of an i-mer	7	cm^3
$\beta_{i,j}$	coagulation coefficient between i-mers and j-mers	7	$cm^3 s^{-1}$
$\delta_{2,j}$	Kronecker delta function	6	

Nearly all variables used in the code are defined at the beginning of the code in the form of comment statements. The following is a condensed list of some of the variables which are frequently discussed in this manual.

COEF	dummy array for passing coefficients	19	units vary with application
DISTX	array of size distribution functions at the grid points	21	cm^{-6}
ISPLIN	flag to indicate spline interpolation method	27	
ISTOP	error flag	30	
MAXDIS	maximum number of discrete sizes	33	
MAXSRC	maximum number of continuous source mechanisms	33	
MAXTIM	maximum number of output times	33	
MAXVAR	maximum number of grid points	33	
NDISCR	number of discrete particles sizes	33	
NPTS	dummy integer representing length of an array	19	
NQUADP	number of quadrature points	29	
NVAR	number of grid points	28	
NVARM1	number of grid points minus one	26	
PARTAL	array of partial derivatives of the growth rate with respect to particle size	25	s^{-1}
RATE	array of growth rates	25	$cm^3 s^{-1}$

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R. T. Curtis
Chief of Analytical Advanced Reactor
Safety Research
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M. Silberberg
Chief of Experimental Fast Reactor
Safety Research
U. S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington, DC 20555

Dr. Robert Bergstrom
Systems Applications, Inc.
950 Northgate Drive
San Rafael, CA 94903

Dr. Richard C. Flagan
Dept. of Environmental Engineering
California Institute of Technology
Pasadena, CA 91125

Dr. Ronald L. Drake
Battelle Pacific Northwest Labs
Richland, WA 99352

Dr. William S. Gregory
Los Alamos Scientific Laboratory
WX-8, Mail Stop 928
P. O. Box 1663
Los Alamos, NM 87545

Dr. P. H. McMurry
Department of Mechanical Engineering
125 Mechanical Engineering
111 Church Street SE
Minneapolis, MN 55455

Dr. George Mulholland
U. S. Department of Commerce
National Bureau of Standards
Washington, DC 20232

John H. Seinfeld
Department of Chemical Engineering
California Institute of Technology
Pasadena, CA 91125

John Glissmeyer
Battelle Pacific Northwest
P. O. Box 999
Richland, WA 99352

Melvin G. Piepho
Fast Reactor Safety Development Div.
P. O. Box 1970
Westinghouse Hanford
Richland, WA 99352

Dr. Leonard K. Peters
University of Kentucky
College of Engineering
Department of Chemical Engineering
Lexington, KY 40506

Dr. Thomas W. Peterson
Department of Chemical Engineering
University of Arizona
Tucson, AZ 85721

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