

## Acetylene (C<sub>2</sub>H<sub>2</sub>)

Z = 14

Molecular Mass :  $M_A = 26.03728$

$$\sigma_a(\text{Mb}) = 109.76097 \frac{df}{dE} (\text{eV}^{-1})$$

$$\mu_m = \sigma_a \cdot N_A \cdot M_A^{-1}$$

Table I. Integrated oscillator strength,  $f$ , for transitions below the IP.

Energy (eV)	$f$	$\lambda$ (Å)	Remarks
5.865 – 6.640	0.0011	2114.0 – 1867.2	$\tilde{X} \rightarrow \tilde{A}$
6.68 – 8.00	0.0108	1856.1 – 1549.8	$\tilde{X} \rightarrow \tilde{B}$
8.161 – 11.126	0.8571	1519.2 – 1114.4	$\tilde{X} \rightarrow \tilde{R}$
9.102 – 9.619	0.1233	1362.2 – 1289.0	$\tilde{X} \rightarrow \tilde{E}$
11.126 – 11.400	0.0718	1114.4 – 1087.6	–

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ .

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
1.1401E+01	2.4028E-01	2.6374E+01	6.1000E+05	1.0875E+03
1.1407E+01	2.5152E-01	2.7607E+01	6.3851E+05	1.0869E+03
1.1409E+01	2.7308E-01	2.9974E+01	6.9326E+05	1.0867E+03
1.1413E+01	3.1309E-01	3.4365E+01	7.9482E+05	1.0863E+03
1.1416E+01	3.2971E-01	3.6190E+01	8.3703E+05	1.0861E+03
1.1418E+01	3.3870E-01	3.7176E+01	8.5984E+05	1.0859E+03
1.1423E+01	3.0766E-01	3.3769E+01	7.8104E+05	1.0854E+03
1.1424E+01	2.7529E-01	3.0216E+01	6.9886E+05	1.0853E+03
1.1428E+01	2.3572E-01	2.5872E+01	5.9840E+05	1.0849E+03
1.1431E+01	2.1638E-01	2.3750E+01	5.4931E+05	1.0846E+03
1.1433E+01	2.0963E-01	2.3009E+01	5.3217E+05	1.0844E+03
1.1437E+01	2.0557E-01	2.2564E+01	5.2188E+05	1.0841E+03
1.1440E+01	2.1410E-01	2.3500E+01	5.4354E+05	1.0838E+03
1.1444E+01	2.4871E-01	2.7298E+01	6.3138E+05	1.0834E+03
1.1447E+01	2.8152E-01	3.0899E+01	7.1467E+05	1.0831E+03
1.1448E+01	2.9455E-01	3.2330E+01	7.4776E+05	1.0830E+03
1.1451E+01	2.8600E-01	3.1392E+01	7.2606E+05	1.0827E+03
1.1452E+01	2.6127E-01	2.8678E+01	6.6328E+05	1.0826E+03

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
1.1455E+01	2.4868E-01	2.7295E+01	6.3131E+05	1.0824E+03
1.1457E+01	2.4418E-01	2.6801E+01	6.1988E+05	1.0822E+03
1.1460E+01	2.4372E-01	2.6751E+01	6.1873E+05	1.0819E+03
1.1462E+01	2.4865E-01	2.7293E+01	6.3125E+05	1.0817E+03
1.1474E+01	2.2210E-01	2.4378E+01	5.6384E+05	1.0806E+03
1.1478E+01	2.2838E-01	2.5068E+01	5.7979E+05	1.0802E+03
1.1481E+01	2.4456E-01	2.6843E+01	6.2085E+05	1.0799E+03
1.1482E+01	2.6119E-01	2.8669E+01	6.6308E+05	1.0798E+03
1.1483E+01	2.6883E-01	2.9507E+01	6.8246E+05	1.0797E+03
1.1485E+01	2.7152E-01	2.9802E+01	6.8929E+05	1.0795E+03
1.1489E+01	2.5443E-01	2.7926E+01	6.4591E+05	1.0792E+03
1.1493E+01	2.4587E-01	2.6987E+01	6.2419E+05	1.0788E+03
1.1495E+01	2.3957E-01	2.6296E+01	6.0819E+05	1.0786E+03
1.1496E+01	2.4407E-01	2.6789E+01	6.1961E+05	1.0785E+03
1.1500E+01	2.2967E-01	2.5209E+01	5.8306E+05	1.0781E+03
1.1503E+01	2.1078E-01	2.3136E+01	5.3510E+05	1.0778E+03
1.1507E+01	2.0447E-01	2.2443E+01	5.1908E+05	1.0775E+03
1.1509E+01	2.0672E-01	2.2690E+01	5.2479E+05	1.0773E+03
1.1511E+01	2.2559E-01	2.4761E+01	5.7271E+05	1.0771E+03
1.1512E+01	2.3098E-01	2.5353E+01	5.8638E+05	1.0770E+03
1.1516E+01	2.3726E-01	2.6042E+01	6.0233E+05	1.0766E+03
1.1517E+01	2.4131E-01	2.6487E+01	6.1261E+05	1.0765E+03
1.1518E+01	2.4401E-01	2.6782E+01	6.1945E+05	1.0764E+03
1.1521E+01	2.3725E-01	2.6041E+01	6.0230E+05	1.0762E+03
1.1528E+01	2.2645E-01	2.4855E+01	5.7487E+05	1.0755E+03
1.1529E+01	2.2914E-01	2.5151E+01	5.8171E+05	1.0754E+03
1.1530E+01	2.4127E-01	2.6482E+01	6.1250E+05	1.0753E+03
1.1533E+01	2.5385E-01	2.7863E+01	6.4444E+05	1.0750E+03
1.1534E+01	2.6914E-01	2.9541E+01	6.8324E+05	1.0749E+03
1.1538E+01	2.7677E-01	3.0379E+01	7.0262E+05	1.0746E+03
1.1543E+01	2.6417E-01	2.8995E+01	6.7063E+05	1.0741E+03
1.1546E+01	2.6056E-01	2.8599E+01	6.6148E+05	1.0738E+03
1.1548E+01	2.6101E-01	2.8648E+01	6.6260E+05	1.0736E+03
1.1556E+01	2.4120E-01	2.6474E+01	6.1232E+05	1.0729E+03
1.1564E+01	2.4118E-01	2.6472E+01	6.1227E+05	1.0722E+03
1.1566E+01	2.3443E-01	2.5731E+01	5.9513E+05	1.0720E+03

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
1.1570E+01	2.3712E-01	2.6026E+01	6.0196E+05	1.0716E+03
1.1573E+01	2.4250E-01	2.6618E+01	6.1564E+05	1.0713E+03
1.1576E+01	2.4385E-01	2.6765E+01	6.1904E+05	1.0710E+03
1.1578E+01	2.5058E-01	2.7504E+01	6.3614E+05	1.0709E+03
1.1580E+01	2.4609E-01	2.7011E+01	6.2473E+05	1.0707E+03
1.1582E+01	2.5597E-01	2.8095E+01	6.4981E+05	1.0705E+03
1.1583E+01	2.4877E-01	2.7305E+01	6.3154E+05	1.0704E+03
1.1585E+01	2.4697E-01	2.7107E+01	6.2696E+05	1.0702E+03
1.1591E+01	2.3166E-01	2.5428E+01	5.8811E+05	1.0697E+03
1.1595E+01	2.3076E-01	2.5328E+01	5.8581E+05	1.0693E+03
1.1597E+01	2.2580E-01	2.4784E+01	5.7322E+05	1.0691E+03
1.1602E+01	2.2579E-01	2.4783E+01	5.7320E+05	1.0686E+03
1.1610E+01	2.3880E-01	2.6211E+01	6.0623E+05	1.0679E+03
1.1616E+01	2.5228E-01	2.7690E+01	6.4045E+05	1.0674E+03
1.1617E+01	2.5227E-01	2.7689E+01	6.4043E+05	1.0673E+03
1.1619E+01	2.5811E-01	2.8330E+01	6.5525E+05	1.0671E+03
1.1621E+01	2.5136E-01	2.7590E+01	6.3813E+05	1.0669E+03
1.1623E+01	2.5000E-01	2.7441E+01	6.3468E+05	1.0667E+03
1.1625E+01	2.5000E-01	2.7440E+01	6.3465E+05	1.0665E+03
1.1630E+01	2.5178E-01	2.7636E+01	6.3919E+05	1.0661E+03
1.1636E+01	2.6481E-01	2.9066E+01	6.7226E+05	1.0655E+03
1.1642E+01	2.6299E-01	2.8866E+01	6.6763E+05	1.0650E+03
1.1646E+01	2.5264E-01	2.7730E+01	6.4138E+05	1.0646E+03
1.1648E+01	2.5264E-01	2.7729E+01	6.4135E+05	1.0644E+03
1.1650E+01	2.4184E-01	2.6544E+01	6.1394E+05	1.0642E+03
1.1660E+01	2.3147E-01	2.5406E+01	5.8762E+05	1.0633E+03
1.1669E+01	2.4988E-01	2.7427E+01	6.3436E+05	1.0625E+03
1.1670E+01	2.5572E-01	2.8068E+01	6.4918E+05	1.0624E+03
1.1672E+01	2.5886E-01	2.8413E+01	6.5717E+05	1.0622E+03
1.1676E+01	2.5256E-01	2.7722E+01	6.4117E+05	1.0619E+03
1.1680E+01	2.4761E-01	2.7177E+01	6.2858E+05	1.0615E+03
1.1690E+01	2.4533E-01	2.6928E+01	6.2281E+05	1.0606E+03
1.1698E+01	2.3991E-01	2.6333E+01	6.0905E+05	1.0599E+03
1.1700E+01	2.3856E-01	2.6185E+01	6.0562E+05	1.0597E+03
1.1808E+01	2.5469E-01	2.7955E+01	6.4657E+05	1.0500E+03
1.2096E+01	2.7991E-01	3.0723E+01	7.1060E+05	1.0250E+03

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
1.2398E+01	3.0623E-01	3.3612E+01	7.7740E+05	1.0000E+03
1.2716E+01	3.3408E-01	3.6669E+01	8.4811E+05	9.7500E+02
1.3051E+01	3.7618E-01	4.1290E+01	9.5499E+05	9.5000E+02
1.3260E+01	4.1057E-01	4.5064E+01	1.0423E+06	9.3500E+02
1.3335E+01	4.2225E-01	4.6347E+01	1.0719E+06	9.2980E+02
1.3458E+01	4.2708E-01	4.6877E+01	1.0842E+06	9.2130E+02
1.3643E+01	4.1314E-01	4.5347E+01	1.0488E+06	9.0880E+02
1.3776E+01	3.6440E-01	3.9997E+01	9.2509E+05	9.0000E+02
1.3986E+01	3.3224E-01	3.6467E+01	8.4345E+05	8.8650E+02
1.4124E+01	3.8854E-01	4.2647E+01	9.8638E+05	8.7780E+02
1.4253E+01	3.0437E-01	3.3408E+01	7.7268E+05	8.6990E+02
1.4373E+01	3.4728E-01	3.8117E+01	8.8161E+05	8.6260E+02
1.4457E+01	3.2906E-01	3.6117E+01	8.3536E+05	8.5760E+02
1.4641E+01	3.4400E-01	3.7757E+01	8.7329E+05	8.4680E+02
1.4723E+01	3.7834E-01	4.1527E+01	9.6048E+05	8.4210E+02
1.4831E+01	4.0512E-01	4.4467E+01	1.0285E+06	8.3600E+02
1.4967E+01	5.0424E-01	5.5346E+01	1.2801E+06	8.2840E+02
1.5041E+01	4.9786E-01	5.4646E+01	1.2639E+06	8.2430E+02
1.5127E+01	5.3585E-01	5.8816E+01	1.3603E+06	8.1960E+02
1.5226E+01	5.3585E-01	5.8816E+01	1.3603E+06	8.1430E+02
1.5297E+01	5.4606E-01	5.9936E+01	1.3862E+06	8.1050E+02
1.5419E+01	5.0798E-01	5.5756E+01	1.2896E+06	8.0410E+02
1.5543E+01	5.5517E-01	6.0936E+01	1.4094E+06	7.9770E+02
1.5692E+01	5.1071E-01	5.6056E+01	1.2965E+06	7.9010E+02
1.5849E+01	5.0588E-01	5.5526E+01	1.2843E+06	7.8230E+02
1.5967E+01	5.1608E-01	5.6646E+01	1.3102E+06	7.7650E+02
1.6068E+01	4.7427E-01	5.2056E+01	1.2040E+06	7.7160E+02
1.6177E+01	4.8930E-01	5.3706E+01	1.2422E+06	7.6640E+02
1.6314E+01	4.6944E-01	5.1526E+01	1.1917E+06	7.6000E+02
1.6531E+01	4.5332E-01	4.9756E+01	1.1508E+06	7.5000E+02
1.6761E+01	4.2170E-01	4.6287E+01	1.0706E+06	7.3970E+02
1.6961E+01	4.0248E-01	4.4177E+01	1.0218E+06	7.3100E+02
1.7075E+01	4.0248E-01	4.4177E+01	1.0218E+06	7.2610E+02
1.7297E+01	3.9119E-01	4.2937E+01	9.9309E+05	7.1680E+02
1.7712E+01	3.8636E-01	4.2407E+01	9.8083E+05	7.0000E+02
1.7852E+01	3.7779E-01	4.1467E+01	9.5909E+05	6.9450E+02

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
1.7997E+01	3.8208E-01	4.1937E+01	9.6996E+05	6.8890E+02
1.8134E+01	3.7406E-01	4.1057E+01	9.4961E+05	6.8370E+02
1.8268E+01	3.7725E-01	4.1407E+01	9.5770E+05	6.7870E+02
1.8530E+01	3.7032E-01	4.0647E+01	9.4012E+05	6.6910E+02
1.8791E+01	3.6440E-01	3.9997E+01	9.2509E+05	6.5980E+02
1.9074E+01	3.5584E-01	3.9057E+01	9.0335E+05	6.5000E+02
1.9762E+01	3.3489E-01	3.6757E+01	8.5016E+05	6.2740E+02
2.0660E+01	3.0778E-01	3.3782E+01	7.8135E+05	6.0012E+02
2.1000E+01	3.0138E-01	3.3080E+01	7.6510E+05	5.9040E+02
2.1500E+01	2.9558E-01	3.2443E+01	7.5038E+05	5.7667E+02
2.2000E+01	2.8128E-01	3.0874E+01	7.1408E+05	5.6356E+02
2.2500E+01	2.7158E-01	2.9809E+01	6.8946E+05	5.5104E+02
2.3000E+01	2.5978E-01	2.8514E+01	6.5950E+05	5.3906E+02
2.3500E+01	2.4819E-01	2.7241E+01	6.3006E+05	5.2759E+02
2.4000E+01	2.3509E-01	2.5803E+01	5.9680E+05	5.1660E+02
2.4500E+01	2.2529E-01	2.4728E+01	5.7192E+05	5.0606E+02
2.5000E+01	2.2249E-01	2.4420E+01	5.6482E+05	4.9594E+02
2.5500E+01	2.0939E-01	2.2983E+01	5.3156E+05	4.8621E+02
2.6000E+01	2.0099E-01	2.2061E+01	5.1024E+05	4.7686E+02
2.6500E+01	1.9509E-01	2.1413E+01	4.9526E+05	4.6786E+02
2.7000E+01	1.8869E-01	2.0711E+01	4.7902E+05	4.5920E+02
2.7500E+01	1.8199E-01	1.9975E+01	4.6201E+05	4.5085E+02
2.8000E+01	1.7459E-01	1.9163E+01	4.4322E+05	4.4280E+02
2.8500E+01	1.6939E-01	1.8592E+01	4.3002E+05	4.3503E+02
2.9000E+01	1.6359E-01	1.7956E+01	4.1530E+05	4.2753E+02
2.9500E+01	1.5789E-01	1.7330E+01	4.0083E+05	4.2029E+02
3.0000E+01	1.5239E-01	1.6727E+01	3.8687E+05	4.1328E+02
3.1000E+01	1.4139E-01	1.5519E+01	3.5894E+05	3.9995E+02
3.2000E+01	1.3309E-01	1.4608E+01	3.3787E+05	3.8745E+02
3.3000E+01	1.2749E-01	1.3994E+01	3.2366E+05	3.7571E+02
3.4000E+01	1.1899E-01	1.3061E+01	3.0208E+05	3.6466E+02
3.5000E+01	1.1309E-01	1.2413E+01	2.8710E+05	3.5424E+02
3.6000E+01	1.0819E-01	1.1875E+01	2.7467E+05	3.4440E+02
3.7000E+01	1.0269E-01	1.1272E+01	2.6070E+05	3.3509E+02
3.8000E+01	9.6794E-02	1.0624E+01	2.4573E+05	3.2627E+02
3.9000E+01	9.3194E-02	1.0229E+01	2.3659E+05	3.1791E+02

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
4.0000E+01	8.8895E-02	9.7572E+00	2.2567E+05	3.0996E+02
4.1000E+01	8.4695E-02	9.2962E+00	2.1501E+05	3.0240E+02
4.2000E+01	8.0795E-02	8.8682E+00	2.0511E+05	2.9520E+02
4.3000E+01	7.6295E-02	8.3743E+00	1.9369E+05	2.8834E+02
4.4000E+01	7.3496E-02	8.0669E+00	1.8658E+05	2.8178E+02
4.5000E+01	7.0296E-02	7.7157E+00	1.7846E+05	2.7552E+02
4.6000E+01	6.6696E-02	7.3206E+00	1.6932E+05	2.6953E+02
4.7000E+01	6.2896E-02	6.9036E+00	1.5967E+05	2.6380E+02
4.8000E+01	6.0696E-02	6.6621E+00	1.5409E+05	2.5830E+02
4.9000E+01	5.8097E-02	6.3767E+00	1.4749E+05	2.5303E+02
5.0000E+01	5.4797E-02	6.0145E+00	1.3911E+05	2.4797E+02
5.1000E+01	5.2097E-02	5.7182E+00	1.3226E+05	2.4311E+02
5.2000E+01	5.0097E-02	5.4987E+00	1.2718E+05	2.3843E+02
5.3000E+01	4.7597E-02	5.2243E+00	1.2083E+05	2.3393E+02
5.4000E+01	4.4797E-02	4.9170E+00	1.1372E+05	2.2960E+02
5.5000E+01	4.3197E-02	4.7414E+00	1.0966E+05	2.2543E+02
5.6000E+01	3.9898E-02	4.3792E+00	1.0129E+05	2.2140E+02
5.7000E+01	3.8698E-02	4.2475E+00	9.8240E+04	2.1752E+02
5.8000E+01	3.6298E-02	3.9841E+00	9.2148E+04	2.1377E+02
5.9000E+01	3.4998E-02	3.8414E+00	8.8848E+04	2.1014E+02
6.0000E+01	3.3398E-02	3.6658E+00	8.4786E+04	2.0664E+02
6.1000E+01	3.2198E-02	3.5341E+00	8.1740E+04	2.0325E+02
6.2000E+01	3.0198E-02	3.3146E+00	7.6663E+04	1.9997E+02
7.0000E+01	2.0899E-02	2.2939E+00	5.3056E+04	1.7712E+02
8.0000E+01	1.5648E-02	1.7175E+00	3.9724E+04	1.5498E+02
9.0000E+01	1.1604E-02	1.2737E+00	2.9459E+04	1.3776E+02
1.0000E+02	9.1528E-03	1.0046E+00	2.3236E+04	1.2398E+02
1.2500E+02	5.6913E-03	6.2469E-01	1.4448E+04	9.9187E+01
1.5000E+02	3.7941E-03	4.1644E-01	9.6319E+03	8.2656E+01
1.7500E+02	2.6268E-03	2.8832E-01	6.6686E+03	7.0848E+01
2.0000E+02	1.8722E-03	2.0549E-01	4.7528E+03	6.1992E+01
2.2500E+02	1.3671E-03	1.5005E-01	3.4705E+03	5.5104E+01
2.5000E+02	1.0190E-03	1.1185E-01	2.5869E+03	4.9594E+01
2.7500E+02	7.7309E-04	8.4855E-02	1.9626E+03	4.5085E+01
2.8365E+02	7.0518E-04	7.7401E-02	1.7902E+03	4.3710E+01
2.8420E+02	2.1184E-03	2.3252E-01	5.3780E+03	4.3626E+01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
2.8456E+02	5.2146E-03	5.7236E-01	1.3238E+04	4.3570E+01
2.8481E+02	1.0429E-02	1.1447E+00	2.6476E+04	4.3532E+01
2.8506E+02	3.7318E-02	4.0960E+00	9.4737E+04	4.3494E+01
2.8535E+02	7.5287E-02	8.2636E+00	1.9113E+05	4.3450E+01
2.8553E+02	1.1342E-01	1.2449E+01	2.8793E+05	4.3422E+01
2.8561E+02	1.3346E-01	1.4649E+01	3.3881E+05	4.3410E+01
2.8579E+02	1.4454E-01	1.5865E+01	3.6695E+05	4.3383E+01
2.8597E+02	1.3215E-01	1.4505E+01	3.3549E+05	4.3356E+01
2.8611E+02	1.0625E-01	1.1662E+01	2.6972E+05	4.3334E+01
2.8629E+02	6.7791E-02	7.4408E+00	1.7210E+05	4.3307E+01
2.8651E+02	3.7480E-02	4.1139E+00	9.5150E+04	4.3274E+01
2.8673E+02	1.4992E-02	1.6456E+00	3.8060E+04	4.3241E+01
2.8684E+02	9.4514E-03	1.0374E+00	2.3994E+04	4.3224E+01
2.8702E+02	5.5406E-03	6.0814E-01	1.4066E+04	4.3197E+01
2.8730E+02	2.7073E-03	2.9716E-01	6.8729E+03	4.3155E+01
2.8733E+02	3.2075E-03	3.5206E-01	8.1427E+03	4.3150E+01
2.8735E+02	3.0998E-03	3.4023E-01	7.8693E+03	4.3147E+01
2.8736E+02	3.9292E-03	4.3127E-01	9.9749E+03	4.3146E+01
2.8739E+02	3.4359E-03	3.7713E-01	8.7227E+03	4.3141E+01
2.8743E+02	4.1579E-03	4.5638E-01	1.0555E+04	4.3135E+01
2.8746E+02	3.2228E-03	3.5374E-01	8.1816E+03	4.3131E+01
2.8747E+02	3.9976E-03	4.3878E-01	1.0149E+04	4.3129E+01
2.8750E+02	4.1669E-03	4.5737E-01	1.0578E+04	4.3125E+01
2.8752E+02	3.3960E-03	3.7275E-01	8.6212E+03	4.3122E+01
2.8754E+02	4.0061E-03	4.3971E-01	1.0170E+04	4.3119E+01
2.8755E+02	4.8349E-03	5.3069E-01	1.2274E+04	4.3117E+01
2.8756E+02	4.2294E-03	4.6422E-01	1.0737E+04	4.3116E+01
2.8759E+02	4.5081E-03	4.9481E-01	1.1444E+04	4.3111E+01
2.8763E+02	7.2737E-03	7.9837E-01	1.8465E+04	4.3105E+01
2.8766E+02	7.6638E-03	8.4119E-01	1.9456E+04	4.3101E+01
2.8774E+02	1.5680E-02	1.7211E+00	3.9807E+04	4.3089E+01
2.8777E+02	1.6678E-02	1.8306E+00	4.2339E+04	4.3084E+01
2.8781E+02	1.5358E-02	1.6857E+00	3.8988E+04	4.3078E+01
2.8785E+02	1.5307E-02	1.6801E+00	3.8859E+04	4.3073E+01
2.8789E+02	1.6139E-02	1.7714E+00	4.0971E+04	4.3067E+01
2.8791E+02	1.6418E-02	1.8021E+00	4.1680E+04	4.3064E+01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
2.8798E+02	1.8304E-02	2.0091E+00	4.6468E+04	4.3053E+01
2.8801E+02	1.8307E-02	2.0094E+00	4.6475E+04	4.3049E+01
2.8808E+02	1.4174E-02	1.5558E+00	3.5984E+04	4.3038E+01
2.8814E+02	1.1034E-02	1.2111E+00	2.8010E+04	4.3029E+01
2.8818E+02	1.0653E-02	1.1693E+00	2.7044E+04	4.3023E+01
2.8821E+02	1.0711E-02	1.1757E+00	2.7192E+04	4.3019E+01
2.8827E+02	1.1879E-02	1.3038E+00	3.0156E+04	4.3010E+01
2.8830E+02	1.2102E-02	1.3284E+00	3.0724E+04	4.3005E+01
2.8837E+02	1.0620E-02	1.1657E+00	2.6960E+04	4.2995E+01
2.8842E+02	9.7974E-03	1.0754E+00	2.4872E+04	4.2987E+01
2.8849E+02	9.5840E-03	1.0519E+00	2.4330E+04	4.2977E+01
2.8857E+02	1.0257E-02	1.1258E+00	2.6039E+04	4.2965E+01
2.8863E+02	1.2031E-02	1.3205E+00	3.0542E+04	4.2956E+01
2.8867E+02	1.6012E-02	1.7575E+00	4.0649E+04	4.2950E+01
2.8871E+02	2.5017E-02	2.7459E+00	6.3510E+04	4.2944E+01
2.8874E+02	3.6340E-02	3.9887E+00	9.2255E+04	4.2940E+01
2.8876E+02	4.2029E-02	4.6132E+00	1.0670E+05	4.2937E+01
2.8879E+02	4.3634E-02	4.7893E+00	1.1077E+05	4.2932E+01
2.8881E+02	4.2699E-02	4.6867E+00	1.0840E+05	4.2929E+01
2.8884E+02	4.0548E-02	4.4506E+00	1.0294E+05	4.2925E+01
2.8889E+02	3.3154E-02	3.6390E+00	8.4167E+04	4.2917E+01
2.8891E+02	2.7691E-02	3.0393E+00	7.0297E+04	4.2914E+01
2.8894E+02	2.3498E-02	2.5792E+00	5.9653E+04	4.2910E+01
2.8896E+02	2.2175E-02	2.4340E+00	5.6295E+04	4.2907E+01
2.8898E+02	2.2233E-02	2.4403E+00	5.6441E+04	4.2904E+01
2.8900E+02	2.3504E-02	2.5799E+00	5.9670E+04	4.2901E+01
2.8904E+02	2.7098E-02	2.9743E+00	6.8793E+04	4.2895E+01
2.8906E+02	2.8150E-02	3.0898E+00	7.1464E+04	4.2892E+01
2.8909E+02	2.7104E-02	2.9750E+00	6.8808E+04	4.2888E+01
2.8914E+02	2.3466E-02	2.5756E+00	5.9572E+04	4.2880E+01
2.8917E+02	1.8831E-02	2.0670E+00	4.7806E+04	4.2876E+01
2.8924E+02	1.5416E-02	1.6921E+00	3.9136E+04	4.2866E+01
2.8927E+02	1.4094E-02	1.5470E+00	3.5781E+04	4.2861E+01
2.8930E+02	1.3435E-02	1.4747E+00	3.4108E+04	4.2857E+01
2.8932E+02	1.3272E-02	1.4567E+00	3.3693E+04	4.2854E+01
2.8937E+02	1.2118E-02	1.3301E+00	3.0764E+04	4.2846E+01



Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
2.8943E+02	1.0082E-02	1.1066E+00	2.5595E+04	4.2837E+01
2.8948E+02	9.5906E-03	1.0527E+00	2.4347E+04	4.2830E+01
2.8952E+02	1.0093E-02	1.1078E+00	2.5621E+04	4.2824E+01
2.8955E+02	1.1312E-02	1.2416E+00	2.8717E+04	4.2820E+01
2.8959E+02	1.4905E-02	1.6360E+00	3.7838E+04	4.2814E+01
2.8961E+02	2.1369E-02	2.3454E+00	5.4248E+04	4.2811E+01
2.8964E+02	2.9323E-02	3.2185E+00	7.4440E+04	4.2806E+01
2.8966E+02	3.1313E-02	3.4369E+00	7.9492E+04	4.2803E+01
2.8967E+02	3.0321E-02	3.3281E+00	7.6974E+04	4.2802E+01
2.8971E+02	2.2925E-02	2.5163E+00	5.8200E+04	4.2796E+01
2.8975E+02	1.6249E-02	1.7835E+00	4.1251E+04	4.2790E+01
2.8976E+02	1.5202E-02	1.6686E+00	3.8592E+04	4.2789E+01
2.8980E+02	1.3385E-02	1.4691E+00	3.3979E+04	4.2783E+01
2.8982E+02	1.3442E-02	1.4754E+00	3.4125E+04	4.2780E+01
2.8985E+02	1.4495E-02	1.5910E+00	3.6797E+04	4.2775E+01
2.8988E+02	1.6651E-02	1.8277E+00	4.2272E+04	4.2771E+01
2.8991E+02	2.1845E-02	2.3978E+00	5.5458E+04	4.2766E+01
2.8993E+02	2.4884E-02	2.7313E+00	6.3173E+04	4.2763E+01
2.8996E+02	2.6600E-02	2.9197E+00	6.7528E+04	4.2759E+01
2.9000E+02	2.5721E-02	2.8232E+00	6.5297E+04	4.2753E+01
2.9004E+02	2.2745E-02	2.4965E+00	5.7741E+04	4.2747E+01
2.9009E+02	1.6510E-02	1.8122E+00	4.1914E+04	4.2740E+01
2.9014E+02	1.3866E-02	1.5219E+00	3.5201E+04	4.2733E+01
2.9017E+02	1.3869E-02	1.5223E+00	3.5208E+04	4.2728E+01
2.9019E+02	1.4645E-02	1.6075E+00	3.7179E+04	4.2725E+01
2.9023E+02	1.7853E-02	1.9595E+00	4.5322E+04	4.2719E+01
2.9025E+02	1.8627E-02	2.0446E+00	4.7289E+04	4.2716E+01
2.9028E+02	2.3214E-02	2.5480E+00	5.8932E+04	4.2712E+01
2.9030E+02	2.4266E-02	2.6635E+00	6.1603E+04	4.2709E+01
2.9033E+02	2.2558E-02	2.4760E+00	5.7267E+04	4.2705E+01
2.9037E+02	1.7261E-02	1.8946E+00	4.3821E+04	4.2699E+01
2.9039E+02	1.6435E-02	1.8039E+00	4.1723E+04	4.2696E+01
2.9040E+02	1.6106E-02	1.7678E+00	4.0888E+04	4.2694E+01
2.9044E+02	1.6164E-02	1.7742E+00	4.1036E+04	4.2688E+01
2.9046E+02	1.7383E-02	1.9079E+00	4.4129E+04	4.2685E+01
2.9050E+02	1.8270E-02	2.0054E+00	4.6382E+04	4.2680E+01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
2.9057E+02	2.1812E-02	2.3941E+00	5.5374E+04	4.2669E+01
2.9060E+02	2.0822E-02	2.2855E+00	5.2861E+04	4.2665E+01
2.9063E+02	1.8120E-02	1.9888E+00	4.6000E+04	4.2660E+01
2.9066E+02	1.6413E-02	1.8015E+00	4.1666E+04	4.2656E+01
2.9068E+02	1.6304E-02	1.7895E+00	4.1389E+04	4.2653E+01
2.9070E+02	1.6969E-02	1.8625E+00	4.3079E+04	4.2650E+01
2.9073E+02	1.8297E-02	2.0083E+00	4.6451E+04	4.2646E+01
2.9075E+02	1.9570E-02	2.1481E+00	4.9682E+04	4.2643E+01
2.9080E+02	1.9135E-02	2.1003E+00	4.8577E+04	4.2636E+01
2.9083E+02	1.9359E-02	2.1248E+00	4.9145E+04	4.2631E+01
2.9085E+02	1.9195E-02	2.1069E+00	4.8730E+04	4.2628E+01
2.9086E+02	1.9363E-02	2.1253E+00	4.9155E+04	4.2627E+01
2.9090E+02	1.8759E-02	2.0590E+00	4.7623E+04	4.2621E+01
2.9094E+02	1.7881E-02	1.9626E+00	4.5394E+04	4.2615E+01
2.9097E+02	1.8271E-02	2.0055E+00	4.6384E+04	4.2611E+01
2.9099E+02	1.8328E-02	2.0118E+00	4.6530E+04	4.2608E+01
2.9102E+02	1.9105E-02	2.0970E+00	4.8501E+04	4.2603E+01
2.9104E+02	1.9108E-02	2.0973E+00	4.8508E+04	4.2600E+01
2.9107E+02	1.8670E-02	2.0492E+00	4.7396E+04	4.2596E+01
2.9111E+02	1.8950E-02	2.0800E+00	4.8107E+04	4.2590E+01
2.9118E+02	1.8738E-02	2.0567E+00	4.7570E+04	4.2580E+01
2.9121E+02	1.8576E-02	2.0389E+00	4.7157E+04	4.2576E+01
2.9125E+02	1.8968E-02	2.0819E+00	4.8152E+04	4.2570E+01
2.9132E+02	1.9142E-02	2.1010E+00	4.8594E+04	4.2559E+01
2.9136E+02	1.8869E-02	2.0711E+00	4.7902E+04	4.2554E+01
2.9138E+02	1.9038E-02	2.0897E+00	4.8331E+04	4.2551E+01
2.9140E+02	1.8930E-02	2.0778E+00	4.8057E+04	4.2548E+01
2.9142E+02	1.9097E-02	2.0962E+00	4.8482E+04	4.2545E+01
2.9146E+02	1.8717E-02	2.0544E+00	4.7515E+04	4.2539E+01
2.9150E+02	1.8886E-02	2.0729E+00	4.7945E+04	4.2533E+01
2.9190E+02	1.9555E-02	2.1464E+00	4.9644E+04	4.2475E+01
2.9298E+02	2.0533E-02	2.2537E+00	5.2126E+04	4.2318E+01
2.9385E+02	1.9392E-02	2.1285E+00	4.9229E+04	4.2193E+01
2.9476E+02	2.0044E-02	2.2001E+00	5.0885E+04	4.2063E+01
2.9552E+02	2.2651E-02	2.4862E+00	5.7503E+04	4.1955E+01
2.9588E+02	2.3466E-02	2.5756E+00	5.9572E+04	4.1904E+01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
2.9649E+02	2.1837E-02	2.3968E+00	5.5436E+04	4.1817E+01
2.9703E+02	1.9718E-02	2.1643E+00	5.0057E+04	4.1741E+01
2.9761E+02	1.8578E-02	2.0391E+00	4.7162E+04	4.1660E+01
2.9852E+02	1.8414E-02	2.0211E+00	4.6747E+04	4.1533E+01
2.9949E+02	1.8578E-02	2.0391E+00	4.7162E+04	4.1398E+01
2.9996E+02	1.9066E-02	2.0927E+00	4.8403E+04	4.1334E+01
3.0034E+02	1.8955E-02	2.0805E+00	4.8119E+04	4.1281E+01
3.0077E+02	1.9347E-02	2.1235E+00	4.9114E+04	4.1222E+01
3.0124E+02	1.8907E-02	2.0752E+00	4.7997E+04	4.1158E+01
3.0184E+02	1.8833E-02	2.0672E+00	4.7811E+04	4.1076E+01
3.0334E+02	1.9300E-02	2.1183E+00	4.8995E+04	4.0873E+01
3.0467E+02	1.9912E-02	2.1855E+00	5.0549E+04	4.0695E+01
3.0622E+02	2.0231E-02	2.2206E+00	5.1360E+04	4.0489E+01
3.0777E+02	2.0477E-02	2.2475E+00	5.1983E+04	4.0285E+01
3.0910E+02	2.0697E-02	2.2718E+00	5.2544E+04	4.0111E+01
3.1030E+02	2.0674E-02	2.2692E+00	5.2484E+04	3.9956E+01
3.1197E+02	2.0627E-02	2.2640E+00	5.2365E+04	3.9742E+01
3.1425E+02	1.9821E-02	2.1756E+00	5.0319E+04	3.9454E+01
3.1675E+02	1.8870E-02	2.0712E+00	4.7904E+04	3.9143E+01
3.2018E+02	1.7455E-02	1.9159E+00	4.4313E+04	3.8723E+01
3.2341E+02	1.6259E-02	1.7846E+00	4.1277E+04	3.8337E+01
3.2702E+02	1.5187E-02	1.6669E+00	3.8554E+04	3.7913E+01
3.3003E+02	1.4505E-02	1.5921E+00	3.6824E+04	3.7568E+01
3.3342E+02	1.3872E-02	1.5226E+00	3.5215E+04	3.7186E+01
3.3656E+02	1.3361E-02	1.4665E+00	3.3919E+04	3.6839E+01
3.4000E+02	1.2875E-02	1.4132E+00	3.2686E+04	3.6466E+01
3.4335E+02	1.2462E-02	1.3679E+00	3.1638E+04	3.6110E+01
3.4683E+02	1.2123E-02	1.3306E+00	3.0776E+04	3.5748E+01
3.5013E+02	1.1734E-02	1.2879E+00	2.9788E+04	3.5411E+01
3.5344E+02	1.1395E-02	1.2507E+00	2.8927E+04	3.5079E+01
3.5731E+02	1.1104E-02	1.2188E+00	2.8189E+04	3.4699E+01
3.6000E+02	1.1087E-02	1.2169E+00	2.8145E+04	3.4440E+01
4.0000E+02	8.6520E-03	9.4965E-01	2.1964E+04	3.0996E+01
4.5000E+02	6.4978E-03	7.1320E-01	1.6496E+04	2.7552E+01
5.0000E+02	4.9966E-03	5.4843E-01	1.2685E+04	2.4797E+01
6.0000E+02	3.1358E-03	3.4419E-01	7.9607E+03	2.0664E+01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
7.0000E+02	2.0973E-03	2.3020E-01	5.3243E+03	1.7712E+01
8.0000E+02	1.4737E-03	1.6176E-01	3.7412E+03	1.5498E+01
9.0000E+02	1.0769E-03	1.1820E-01	2.7339E+03	1.3776E+01
1.0000E+03	8.1227E-04	8.9156E-02	2.0621E+03	1.2398E+01
1.2500E+03	4.4592E-04	4.8945E-02	1.1320E+03	9.9187E+00
1.5000E+03	2.7302E-04	2.9967E-02	6.9311E+02	8.2656E+00
1.7500E+03	1.6270E-04	1.7858E-02	4.1304E+02	7.0848E+00
2.0000E+03	1.0994E-04	1.2067E-02	2.7910E+02	6.1992E+00
2.2500E+03	7.7592E-05	8.5166E-03	1.9698E+02	5.5104E+00
2.5000E+03	5.6696E-05	6.2231E-03	1.4393E+02	4.9594E+00
2.7500E+03	4.2618E-05	4.6778E-03	1.0819E+02	4.5085E+00
3.0000E+03	3.2799E-05	3.6001E-03	8.3266E+01	4.1328E+00
3.5000E+03	2.0561E-05	2.2568E-03	5.2196E+01	3.5424E+00
4.0000E+03	1.3675E-05	1.5010E-03	3.4716E+01	3.0996E+00
4.5000E+03	9.5180E-06	1.0447E-03	2.4163E+01	2.7552E+00
5.0000E+03	6.8673E-06	7.5376E-04	1.7434E+01	2.4797E+00
6.0000E+03	3.8818E-06	4.2607E-04	9.8546E+00	2.0664E+00
7.0000E+03	2.3812E-06	2.6136E-04	6.0450E+00	1.7712E+00
8.0000E+03	1.5506E-06	1.7020E-04	3.9365E+00	1.5498E+00
9.0000E+03	1.0567E-06	1.1599E-04	2.6826E+00	1.3776E+00
1.0000E+04	7.1188E-07	7.8137E-05	1.8072E+00	1.2398E+00
1.2500E+04	3.4473E-07	3.7837E-05	8.7514E-01	9.9187E-01
1.5000E+04	1.9063E-07	2.0923E-05	4.8393E-01	8.2656E-01
1.7500E+04	1.1551E-07	1.2678E-05	2.9323E-01	7.0848E-01
2.0000E+04	7.4848E-08	8.2153E-06	1.9001E-01	6.1992E-01
2.2500E+04	5.1045E-08	5.6028E-06	1.2959E-01	5.5104E-01
2.5000E+04	3.6246E-08	3.9784E-06	9.2017E-02	4.9594E-01
2.7500E+04	2.6539E-08	2.9129E-06	6.7373E-02	4.5085E-01
3.0000E+04	1.9902E-08	2.1845E-06	5.0525E-02	4.1328E-01
3.5000E+04	1.1946E-08	1.3112E-06	3.0327E-02	3.5424E-01
4.0000E+04	7.6776E-09	8.4271E-07	1.9491E-02	3.0996E-01
4.5000E+04	5.1984E-09	5.7058E-07	1.3197E-02	2.7552E-01
5.0000E+04	3.6677E-09	4.0257E-07	9.3109E-03	2.4797E-01
6.0000E+04	2.0057E-09	2.2015E-07	5.0919E-03	2.0664E-01
7.0000E+04	1.2039E-09	1.3214E-07	3.0563E-03	1.7712E-01
8.0000E+04	7.7405E-10	8.4961E-08	1.9650E-03	1.5498E-01

Table II. Oscillator-strength density,  $df/dE$ , photoabsorption cross section,  $\sigma_a$ , and mass absorption coefficient,  $\mu_m$ . (Continued)

Energy (eV)	$f_n$ (eV <sup>-1</sup> )	$\sigma_a$ (Mb)	$\mu_m$ (cm <sup>2</sup> g <sup>-1</sup> )	$\lambda$ (Å)
9.0000E+04	5.2472E-10	5.7593E-08	1.3321E-03	1.3776E-01
1.0000E+05	3.7077E-10	4.0696E-08	9.4125E-04	1.2398E-01

When photon energy,  $E$ , is higher than  $10^5$  eV, the photoabsorption cross section of each atom,  $\sigma_a$ , in Mb is given by

$$\sigma_a = 680 (Z_c - 0.3)^6 \left( \frac{Ry}{E} \right)^4 \frac{\exp[-4\chi \arctan(\chi^{-1})]}{1 - \exp(-2\pi\chi)} .$$

Here  $Z_c$  denotes the atomic number of constituent atoms and  $E$  is photon energy in eV. The quantity  $\chi$  is given by

$$\chi = \sqrt{\frac{E_K}{E - E_K}} ,$$

where  $E_K = 13.6$  and  $291.1$  eV for hydrogen and carbon atoms, respectively.

