

Methane (CH₄)

Z = 10

Molecular Mass : $M_A = 16.04246$

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

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

Table I. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m .

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
8.6100E+00	0.0000E+00	0.0000E+00	0.0000E+00	1.4400E+03
9.0000E+00	3.6349E-02	3.9896E+00	1.4977E+05	1.3776E+03
9.2130E+00	8.4045E-02	9.2248E+00	3.4629E+05	1.3458E+03
9.5000E+00	1.5240E-01	1.6727E+01	6.2792E+05	1.3051E+03
9.6900E+00	1.6986E-01	1.8644E+01	6.9988E+05	1.2795E+03
1.0050E+01	1.5851E-01	1.7399E+01	6.5313E+05	1.2337E+03
1.0425E+01	1.7598E-01	1.9316E+01	7.2509E+05	1.1893E+03
1.0700E+01	1.6508E-01	1.8119E+01	6.8016E+05	1.1587E+03
1.0913E+01	1.5195E-01	1.6679E+01	6.2610E+05	1.1361E+03
1.1270E+01	1.8943E-01	2.0792E+01	7.8051E+05	1.1001E+03
1.1500E+01	2.6153E-01	2.8706E+01	1.0776E+06	1.0781E+03
1.1713E+01	2.7411E-01	3.0086E+01	1.1294E+06	1.0585E+03
1.1900E+01	2.7049E-01	2.9689E+01	1.1145E+06	1.0419E+03
1.2125E+01	2.8713E-01	3.1516E+01	1.1831E+06	1.0225E+03
1.2375E+01	3.0912E-01	3.3929E+01	1.2736E+06	1.0019E+03
1.2610E+01	3.6077E-01	3.9598E+01	1.4865E+06	9.8322E+02
1.3000E+01	4.1187E-01	4.5208E+01	1.6970E+06	9.5372E+02
1.3325E+01	4.4068E-01	4.8369E+01	1.8157E+06	9.3046E+02
1.3620E+01	4.4691E-01	4.9053E+01	1.8414E+06	9.1031E+02
1.4000E+01	4.4725E-01	4.9090E+01	1.8428E+06	8.8560E+02
1.4500E+01	4.4408E-01	4.8742E+01	1.8297E+06	8.5506E+02
1.5000E+01	4.3963E-01	4.8255E+01	1.8114E+06	8.2656E+02
1.5500E+01	4.2921E-01	4.7111E+01	1.7685E+06	7.9990E+02
1.6000E+01	4.1797E-01	4.5877E+01	1.7222E+06	7.7490E+02
1.6500E+01	4.0673E-01	4.4643E+01	1.6758E+06	7.5142E+02
1.7000E+01	3.9413E-01	4.3260E+01	1.6239E+06	7.2932E+02
1.7500E+01	3.7745E-01	4.1429E+01	1.5552E+06	7.0848E+02
1.8000E+01	3.6394E-01	3.9947E+01	1.4996E+06	6.8880E+02

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
1.8500E+01	3.4999E-01	3.8415E+01	1.4420E+06	6.7018E+02
1.9000E+01	3.3693E-01	3.6982E+01	1.3883E+06	6.5255E+02
1.9500E+01	3.2479E-01	3.5649E+01	1.3382E+06	6.3582E+02
2.0000E+01	3.1300E-01	3.4355E+01	1.2897E+06	6.1992E+02
2.0500E+01	2.9768E-01	3.2674E+01	1.2265E+06	6.0480E+02
2.1000E+01	2.8680E-01	3.1480E+01	1.1817E+06	5.9040E+02
2.1500E+01	2.7602E-01	3.0296E+01	1.1373E+06	5.7667E+02
2.2000E+01	2.6559E-01	2.9152E+01	1.0943E+06	5.6356E+02
2.2500E+01	2.5254E-01	2.7719E+01	1.0405E+06	5.5104E+02
2.3000E+01	2.4175E-01	2.6535E+01	9.9610E+05	5.3906E+02
2.3500E+01	2.3178E-01	2.5441E+01	9.5501E+05	5.2759E+02
2.4000E+01	2.2145E-01	2.4306E+01	9.1243E+05	5.1660E+02
2.4500E+01	2.0955E-01	2.3001E+01	8.6341E+05	5.0606E+02
2.5000E+01	2.0043E-01	2.1999E+01	8.2582E+05	4.9594E+02
2.5500E+01	1.9658E-01	2.1576E+01	8.0995E+05	4.8621E+02
2.6000E+01	1.8386E-01	2.0181E+01	7.5756E+05	4.7686E+02
2.6500E+01	1.7433E-01	1.9134E+01	7.1828E+05	4.6786E+02
2.7000E+01	1.6838E-01	1.8481E+01	6.9377E+05	4.5920E+02
2.7500E+01	1.6073E-01	1.7642E+01	6.6227E+05	4.5085E+02
2.8000E+01	1.5328E-01	1.6825E+01	6.3158E+05	4.4280E+02
2.8500E+01	1.4444E-01	1.5854E+01	5.9513E+05	4.3503E+02
2.9000E+01	1.3998E-01	1.5364E+01	5.7674E+05	4.2753E+02
2.9500E+01	1.3561E-01	1.4885E+01	5.5876E+05	4.2029E+02
3.0000E+01	1.2985E-01	1.4252E+01	5.3502E+05	4.1328E+02
3.0500E+01	1.2399E-01	1.3609E+01	5.1086E+05	4.0651E+02
3.1000E+01	1.2041E-01	1.3217E+01	4.9614E+05	3.9995E+02
3.1500E+01	1.1115E-01	1.2200E+01	4.5799E+05	3.9360E+02
3.2000E+01	1.0369E-01	1.1381E+01	4.2723E+05	3.8745E+02
3.2500E+01	9.9114E-02	1.0879E+01	4.0838E+05	3.8149E+02
3.3000E+01	9.7633E-02	1.0716E+01	4.0228E+05	3.7571E+02
3.3500E+01	9.3555E-02	1.0269E+01	3.8548E+05	3.7010E+02
3.4000E+01	9.1474E-02	1.0040E+01	3.7690E+05	3.6466E+02
3.4500E+01	8.6795E-02	9.5267E+00	3.5762E+05	3.5937E+02
3.5000E+01	8.2513E-02	9.0567E+00	3.3998E+05	3.5424E+02
3.5500E+01	8.0828E-02	8.8718E+00	3.3304E+05	3.4925E+02
3.6000E+01	7.6845E-02	8.4345E+00	3.1662E+05	3.4440E+02

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
3.6500E+01	7.4059E-02	8.1288E+00	3.0514E+05	3.3968E+02
3.7000E+01	7.2072E-02	7.9107E+00	2.9696E+05	3.3509E+02
3.7500E+01	6.9784E-02	7.6596E+00	2.8753E+05	3.3062E+02
3.8000E+01	6.7496E-02	7.4084E+00	2.7810E+05	3.2627E+02
3.8500E+01	6.3306E-02	6.9486E+00	2.6084E+05	3.2204E+02
3.9000E+01	6.3617E-02	6.9827E+00	2.6212E+05	3.1791E+02
3.9500E+01	6.0526E-02	6.6434E+00	2.4939E+05	3.1388E+02
4.0000E+01	5.8435E-02	6.4139E+00	2.4077E+05	3.0996E+02
4.1000E+01	5.4951E-02	6.0315E+00	2.2641E+05	3.0240E+02
4.2000E+01	5.1865E-02	5.6927E+00	2.1370E+05	2.9520E+02
4.3000E+01	4.7475E-02	5.2109E+00	1.9561E+05	2.8834E+02
4.4000E+01	4.4685E-02	4.9047E+00	1.8412E+05	2.8178E+02
4.5000E+01	4.2595E-02	4.6753E+00	1.7550E+05	2.7552E+02
4.6000E+01	3.9802E-02	4.3687E+00	1.6400E+05	2.6953E+02
4.7000E+01	3.7910E-02	4.1610E+00	1.5620E+05	2.6380E+02
4.8000E+01	3.5715E-02	3.9201E+00	1.4716E+05	2.5830E+02
4.9000E+01	3.4823E-02	3.8223E+00	1.4348E+05	2.5303E+02
5.0000E+01	3.1924E-02	3.5040E+00	1.3153E+05	2.4797E+02
5.1000E+01	3.0327E-02	3.3288E+00	1.2496E+05	2.4311E+02
5.2000E+01	2.8931E-02	3.1755E+00	1.1920E+05	2.3843E+02
5.3000E+01	2.7333E-02	3.0000E+00	1.1262E+05	2.3393E+02
5.4000E+01	2.6336E-02	2.8907E+00	1.0851E+05	2.2960E+02
5.5000E+01	2.4334E-02	2.6709E+00	1.0026E+05	2.2543E+02
5.6000E+01	2.2732E-02	2.4951E+00	9.3664E+04	2.2140E+02
5.7000E+01	2.1935E-02	2.4076E+00	9.0378E+04	2.1752E+02
5.8000E+01	2.1137E-02	2.3200E+00	8.7090E+04	2.1377E+02
5.9000E+01	1.9835E-02	2.1771E+00	8.1726E+04	2.1014E+02
6.0000E+01	1.8633E-02	2.0452E+00	7.6772E+04	2.0664E+02
6.1000E+01	1.8437E-02	2.0237E+00	7.5967E+04	2.0325E+02
6.2000E+01	1.7536E-02	1.9248E+00	7.2255E+04	1.9997E+02
6.3000E+01	1.7038E-02	1.8701E+00	7.0201E+04	1.9680E+02
6.4000E+01	1.6035E-02	1.7600E+00	6.6069E+04	1.9373E+02
6.5000E+01	1.5031E-02	1.6499E+00	6.1934E+04	1.9074E+02
6.6000E+01	1.4835E-02	1.6283E+00	6.1123E+04	1.8785E+02
6.7000E+01	1.4234E-02	1.5623E+00	5.8647E+04	1.8505E+02
6.8000E+01	1.3229E-02	1.4520E+00	5.4505E+04	1.8233E+02

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
6.9000E+01	1.3031E-02	1.4303E+00	5.3691E+04	1.7969E+02
7.0000E+01	1.2732E-02	1.3975E+00	5.2459E+04	1.7712E+02
7.1000E+01	1.2635E-02	1.3868E+00	5.2060E+04	1.7463E+02
7.2000E+01	1.1527E-02	1.2652E+00	4.7494E+04	1.7220E+02
7.3000E+01	1.1025E-02	1.2101E+00	4.5426E+04	1.6984E+02
7.4000E+01	1.0725E-02	1.1772E+00	4.4190E+04	1.6755E+02
7.5000E+01	1.0222E-02	1.1220E+00	4.2119E+04	1.6531E+02
7.6000E+01	9.9219E-03	1.0890E+00	4.0881E+04	1.6314E+02
7.7000E+01	9.5200E-03	1.0449E+00	3.9225E+04	1.6102E+02
7.8000E+01	9.3205E-03	1.0230E+00	3.8403E+04	1.5895E+02
7.9000E+01	9.0195E-03	9.8999E-01	3.7163E+04	1.5694E+02
8.0000E+01	8.6169E-03	9.4580E-01	3.5504E+04	1.5498E+02
8.2000E+01	8.2168E-03	9.0188E-01	3.3855E+04	1.5120E+02
8.4000E+01	7.5115E-03	8.2448E-01	3.0950E+04	1.4760E+02
8.6000E+01	7.1101E-03	7.8041E-01	2.9296E+04	1.4417E+02
8.8000E+01	6.7082E-03	7.3630E-01	2.7640E+04	1.4089E+02
9.0000E+01	6.3057E-03	6.9212E-01	2.5981E+04	1.3776E+02
9.2000E+01	5.9027E-03	6.4789E-01	2.4321E+04	1.3477E+02
9.4000E+01	5.7028E-03	6.2595E-01	2.3497E+04	1.3190E+02
9.6000E+01	5.2989E-03	5.8161E-01	2.1833E+04	1.2915E+02
9.8000E+01	5.0984E-03	5.5961E-01	2.1007E+04	1.2651E+02
1.0000E+02	4.7956E-03	5.2637E-01	1.9759E+04	1.2398E+02
1.0200E+02	4.6966E-03	5.1550E-01	1.9351E+04	1.2155E+02
1.0400E+02	4.3931E-03	4.8219E-01	1.8101E+04	1.1922E+02
1.0600E+02	4.2937E-03	4.7128E-01	1.7691E+04	1.1697E+02
1.0800E+02	4.0919E-03	4.4913E-01	1.6860E+04	1.1480E+02
1.1000E+02	3.8898E-03	4.2695E-01	1.6027E+04	1.1271E+02
1.1200E+02	3.6874E-03	4.0474E-01	1.5193E+04	1.1070E+02
1.1270E+02	3.5289E-03	3.8734E-01	1.4540E+04	1.1001E+02
1.1900E+02	3.1742E-03	3.4841E-01	1.3079E+04	1.0419E+02
1.2500E+02	2.8107E-03	3.0851E-01	1.1581E+04	9.9187E+01
1.3291E+02	2.5358E-03	2.7834E-01	1.0448E+04	9.3284E+01
1.4286E+02	2.1280E-03	2.3357E-01	8.7679E+03	8.6787E+01
1.5000E+02	1.8461E-03	2.0263E-01	7.6063E+03	8.2656E+01
1.7500E+02	1.3386E-03	1.4693E-01	5.5154E+03	7.0848E+01
2.0000E+02	9.8876E-04	1.0853E-01	4.0740E+03	6.1992E+01

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
2.2500E+02	7.3852E-04	8.1060E-02	3.0429E+03	5.5104E+01
2.5000E+02	5.5672E-04	6.1107E-02	2.2939E+03	4.9594E+01
2.7500E+02	4.2309E-04	4.6438E-02	1.7432E+03	4.5085E+01
2.8500E+02	3.7985E-04	4.1692E-02	1.5651E+03	4.3503E+01
2.8591E+02	7.6704E-04	8.4191E-02	3.1604E+03	4.3365E+01
2.8640E+02	1.4355E-03	1.5756E-01	5.9145E+03	4.3291E+01
2.8671E+02	3.5206E-03	3.8643E-01	1.4506E+04	4.3244E+01
2.8695E+02	4.5629E-03	5.0083E-01	1.8801E+04	4.3208E+01
2.8701E+02	9.5899E-03	1.0526E+00	3.9513E+04	4.3199E+01
2.8704E+02	1.1444E-02	1.2561E+00	4.7154E+04	4.3194E+01
2.8708E+02	9.6017E-03	1.0539E+00	3.9562E+04	4.3188E+01
2.8712E+02	6.4380E-03	7.0664E-01	2.6527E+04	4.3182E+01
2.8716E+02	3.8042E-03	4.1755E-01	1.5674E+04	4.3176E+01
2.8725E+02	3.0250E-03	3.3202E-01	1.2464E+04	4.3162E+01
2.8734E+02	3.3047E-03	3.6272E-01	1.3616E+04	4.3149E+01
2.8739E+02	4.3685E-03	4.7949E-01	1.8000E+04	4.3141E+01
2.8759E+02	4.1356E-03	4.5392E-01	1.7040E+04	4.3111E+01
2.8768E+02	5.2068E-03	5.7151E-01	2.1454E+04	4.3098E+01
2.8776E+02	7.0680E-03	7.7579E-01	2.9122E+04	4.3086E+01
2.8781E+02	1.0511E-02	1.1537E+00	4.3308E+04	4.3078E+01
2.8786E+02	1.6857E-02	1.8502E+00	6.9455E+04	4.3071E+01
2.8790E+02	2.9012E-02	3.1844E+00	1.1954E+05	4.3065E+01
2.8793E+02	5.5694E-02	6.1130E+00	2.2948E+05	4.3061E+01
2.8795E+02	9.2941E-02	1.0201E+01	3.8294E+05	4.3058E+01
2.8798E+02	1.2781E-01	1.4028E+01	5.2659E+05	4.3053E+01
2.8801E+02	1.1223E-01	1.2318E+01	4.6241E+05	4.3049E+01
2.8803E+02	9.0309E-02	9.9124E+00	3.7210E+05	4.3046E+01
2.8805E+02	6.7599E-02	7.4197E+00	2.7853E+05	4.3043E+01
2.8808E+02	5.0963E-02	5.5937E+00	2.0998E+05	4.3038E+01
2.8810E+02	4.0137E-02	4.4055E+00	1.6538E+05	4.3035E+01
2.8812E+02	3.7500E-02	4.1161E+00	1.5451E+05	4.3032E+01
2.8815E+02	4.0675E-02	4.4645E+00	1.6759E+05	4.3028E+01
2.8817E+02	4.1734E-02	4.5808E+00	1.7196E+05	4.3025E+01
2.8823E+02	3.9101E-02	4.2918E+00	1.6111E+05	4.3016E+01
2.8827E+02	3.9637E-02	4.3506E+00	1.6332E+05	4.3010E+01
2.8832E+02	3.8324E-02	4.2065E+00	1.5791E+05	4.3002E+01

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
2.8836E+02	4.0178E-02	4.4100E+00	1.6554E+05	4.2996E+01
2.8839E+02	4.2561E-02	4.6715E+00	1.7536E+05	4.2992E+01
2.8843E+02	3.5700E-02	3.9185E+00	1.4709E+05	4.2986E+01
2.8849E+02	2.4087E-02	2.6439E+00	9.9247E+04	4.2977E+01
2.8853E+02	1.9340E-02	2.1228E+00	7.9686E+04	4.2971E+01
2.8855E+02	1.8815E-02	2.0652E+00	7.7524E+04	4.2968E+01
2.8860E+02	2.1728E-02	2.3849E+00	8.9526E+04	4.2961E+01
2.8865E+02	3.0187E-02	3.3134E+00	1.2438E+05	4.2953E+01
2.8868E+02	3.3627E-02	3.6909E+00	1.3855E+05	4.2949E+01
2.8876E+02	2.5715E-02	2.8225E+00	1.0595E+05	4.2937E+01
2.8881E+02	2.1761E-02	2.3885E+00	8.9660E+04	4.2929E+01
2.8883E+02	2.0180E-02	2.2150E+00	8.3149E+04	4.2926E+01
2.8888E+02	1.5698E-02	1.7230E+00	6.4680E+04	4.2919E+01
2.8894E+02	1.1217E-02	1.2312E+00	4.6219E+04	4.2910E+01
2.8901E+02	9.6433E-03	1.0585E+00	3.9733E+04	4.2900E+01
2.8908E+02	1.0976E-02	1.2047E+00	4.5223E+04	4.2889E+01
2.8912E+02	1.2039E-02	1.3214E+00	4.9603E+04	4.2883E+01
2.8920E+02	1.0466E-02	1.1487E+00	4.3121E+04	4.2871E+01
2.8926E+02	9.4189E-03	1.0338E+00	3.8809E+04	4.2863E+01
2.8933E+02	1.0750E-02	1.1799E+00	4.4292E+04	4.2852E+01
2.8936E+02	1.4189E-02	1.5574E+00	5.8463E+04	4.2848E+01
2.8941E+02	2.6610E-02	2.9208E+00	1.0964E+05	4.2840E+01
2.8944E+02	3.1105E-02	3.4142E+00	1.2816E+05	4.2836E+01
2.8949E+02	2.2926E-02	2.5164E+00	9.4461E+04	4.2828E+01
2.8952E+02	1.6328E-02	1.7921E+00	6.7274E+04	4.2824E+01
2.8956E+02	1.4221E-02	1.5609E+00	5.8593E+04	4.2818E+01
2.8958E+02	1.5809E-02	1.7352E+00	6.5138E+04	4.2815E+01
2.8964E+02	2.0572E-02	2.2580E+00	8.4763E+04	4.2806E+01
2.8968E+02	1.7938E-02	1.9689E+00	7.3909E+04	4.2800E+01
2.8971E+02	1.3717E-02	1.5056E+00	5.6517E+04	4.2796E+01
2.8975E+02	1.2402E-02	1.3613E+00	5.1101E+04	4.2790E+01
2.8979E+02	1.4258E-02	1.5649E+00	5.8746E+04	4.2784E+01
2.8984E+02	1.8756E-02	2.0586E+00	7.7278E+04	4.2777E+01
2.8989E+02	1.8764E-02	2.0595E+00	7.7312E+04	4.2769E+01
2.8993E+02	2.1939E-02	2.4080E+00	9.0395E+04	4.2763E+01
2.8996E+02	2.3528E-02	2.5825E+00	9.6944E+04	4.2759E+01

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
2.9003E+02	1.7994E-02	1.9750E+00	7.4140E+04	4.2749E+01
2.9011E+02	1.2723E-02	1.3964E+00	5.2421E+04	4.2737E+01
2.9015E+02	1.1673E-02	1.2813E+00	4.8097E+04	4.2731E+01
2.9018E+02	1.2734E-02	1.3977E+00	5.2469E+04	4.2727E+01
2.9022E+02	1.6703E-02	1.8333E+00	6.8821E+04	4.2721E+01
2.9026E+02	1.6973E-02	1.8629E+00	6.9932E+04	4.2715E+01
2.9029E+02	1.6449E-02	1.8054E+00	6.7774E+04	4.2710E+01
2.9034E+02	1.9098E-02	2.0963E+00	7.8691E+04	4.2703E+01
2.9037E+02	1.9896E-02	2.1838E+00	8.1978E+04	4.2699E+01
2.9048E+02	1.5160E-02	1.6639E+00	6.2462E+04	4.2683E+01
2.9054E+02	1.3848E-02	1.5200E+00	5.7058E+04	4.2674E+01
2.9063E+02	1.6239E-02	1.7824E+00	6.6909E+04	4.2660E+01
2.9071E+02	1.5723E-02	1.7258E+00	6.4784E+04	4.2649E+01
2.9076E+02	1.6525E-02	1.8138E+00	6.8087E+04	4.2641E+01
2.9085E+02	1.5482E-02	1.6993E+00	6.3789E+04	4.2628E+01
2.9103E+02	1.5511E-02	1.7025E+00	6.3908E+04	4.2602E+01
2.9126E+02	1.5283E-02	1.6774E+00	6.2969E+04	4.2568E+01
2.9150E+02	1.5057E-02	1.6526E+00	6.2037E+04	4.2533E+01
2.9223E+02	1.3957E-02	1.5320E+00	5.7509E+04	4.2427E+01
2.9366E+02	1.3045E-02	1.4318E+00	5.3748E+04	4.2220E+01
2.9590E+02	1.2217E-02	1.3409E+00	5.0337E+04	4.1901E+01
2.9776E+02	1.1805E-02	1.2958E+00	4.8641E+04	4.1639E+01
3.0025E+02	1.1729E-02	1.2874E+00	4.8328E+04	4.1294E+01
3.0224E+02	1.1652E-02	1.2789E+00	4.8008E+04	4.1022E+01
3.0342E+02	1.1488E-02	1.2609E+00	4.7333E+04	4.0862E+01
3.0479E+02	1.0825E-02	1.1881E+00	4.4601E+04	4.0679E+01
3.0628E+02	1.0245E-02	1.1245E+00	4.2212E+04	4.0481E+01
3.0821E+02	1.0084E-02	1.1068E+00	4.1548E+04	4.0227E+01
3.0908E+02	9.8360E-03	1.0796E+00	4.0527E+04	4.0114E+01
3.1120E+02	9.7582E-03	1.0711E+00	4.0206E+04	3.9841E+01
3.1275E+02	9.3457E-03	1.0258E+00	3.8507E+04	3.9643E+01
3.1580E+02	9.0208E-03	9.9013E-01	3.7168E+04	3.9260E+01
3.1934E+02	8.6138E-03	9.4546E-01	3.5491E+04	3.8825E+01
3.2451E+02	7.8778E-03	8.6468E-01	3.2459E+04	3.8207E+01
3.2961E+02	7.3084E-03	8.0217E-01	3.0113E+04	3.7615E+01
3.3495E+02	6.7395E-03	7.3974E-01	2.7769E+04	3.7016E+01

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
3.4000E+02	6.3284E-03	6.9461E-01	2.6075E+04	3.6466E+01
3.5000E+02	5.9296E-03	6.5084E-01	2.4432E+04	3.5424E+01
4.0000E+02	4.3455E-03	4.7697E-01	1.7905E+04	3.0996E+01
4.5000E+02	3.2575E-03	3.5755E-01	1.3422E+04	2.7552E+01
5.0000E+02	2.4917E-03	2.7349E-01	1.0267E+04	2.4797E+01
6.0000E+02	1.5349E-03	1.6847E-01	6.3242E+03	2.0664E+01
7.0000E+02	9.9984E-04	1.0974E-01	4.1196E+03	1.7712E+01
8.0000E+02	6.8062E-04	7.4706E-02	2.8044E+03	1.5498E+01
9.0000E+02	4.7992E-04	5.2676E-02	1.9774E+03	1.3776E+01
1.0000E+03	3.4821E-04	3.8220E-02	1.4347E+03	1.2398E+01
2.0000E+03	5.4970E-05	6.0336E-03	2.2649E+02	6.1992E+00
2.2500E+03	3.8796E-05	4.2583E-03	1.5985E+02	5.5104E+00
2.5000E+03	2.8348E-05	3.1115E-03	1.1680E+02	4.9594E+00
2.7500E+03	2.1309E-05	2.3389E-03	8.7800E+01	4.5085E+00
3.0000E+03	1.6400E-05	1.8000E-03	6.7571E+01	4.1328E+00
3.5000E+03	1.0280E-05	1.1284E-03	4.2358E+01	3.5424E+00
4.0000E+03	6.8375E-06	7.5049E-04	2.8172E+01	3.0996E+00
4.5000E+03	4.7590E-06	5.2235E-04	1.9609E+01	2.7552E+00
5.0000E+03	3.4336E-06	3.7688E-04	1.4148E+01	2.4797E+00
6.0000E+03	1.9409E-06	2.1304E-04	7.9971E+00	2.0664E+00
7.0000E+03	1.1906E-06	1.3068E-04	4.9056E+00	1.7712E+00
8.0000E+03	7.7531E-07	8.5099E-05	3.1945E+00	1.5498E+00
9.0000E+03	5.2836E-07	5.7993E-05	2.1770E+00	1.3776E+00
1.0000E+04	3.5606E-07	3.9082E-05	1.4671E+00	1.2398E+00
1.2500E+04	1.7242E-07	1.8925E-05	7.1042E-01	9.9187E-01
1.5000E+04	9.5342E-08	1.0465E-05	3.9284E-01	8.2656E-01
1.7500E+04	5.7770E-08	6.3409E-06	2.3803E-01	7.0848E-01
2.0000E+04	3.7435E-08	4.1089E-06	1.5424E-01	6.1992E-01
2.2500E+04	2.5530E-08	2.8022E-06	1.0519E-01	5.5104E-01
2.5000E+04	1.8128E-08	1.9898E-06	7.4694E-02	4.9594E-01
2.7500E+04	1.3273E-08	1.4569E-06	5.4689E-02	4.5085E-01
3.0000E+04	9.9538E-09	1.0925E-06	4.1013E-02	4.1328E-01
3.5000E+04	5.9748E-09	6.5580E-07	2.4618E-02	3.5424E-01
4.0000E+04	3.8398E-09	4.2147E-07	1.5821E-02	3.0996E-01
4.5000E+04	2.5999E-09	2.8536E-07	1.0712E-02	2.7552E-01
5.0000E+04	1.8343E-09	2.0134E-07	7.5579E-03	2.4797E-01

Table II. Oscillator-strength density, df/dE , photoabsorption cross section, σ_a , and mass absorption coefficient, μ_m . (Continued)

Energy (eV)	f_n (eV ⁻¹)	σ_a (Mb)	μ_m (cm ² g ⁻¹)	λ (Å)
6.0000E+04	1.0031E-09	1.1010E-07	4.1332E-03	2.0664E-01
7.0000E+04	6.0210E-10	6.6087E-08	2.4808E-03	1.7712E-01
8.0000E+04	3.8712E-10	4.2491E-08	1.5951E-03	1.5498E-01
9.0000E+04	2.6242E-10	2.8804E-08	1.0813E-03	1.3776E-01
1.0000E+05	1.8543E-10	2.0353E-08	7.6403E-04	1.2398E-01

When photon energy, E , is higher than 10^5 eV, the photoabsorption cross section of each atom, σ_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 χ is given by

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

where $E_K = 13.6$ and 290.707 eV for hydrogen and carbon atoms, respectively.

