|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TABLE I: A sample of some atomic physical properties | | | | |  |  |  |
| Atom | At. Radius r/m | At. Density ρ/kgm-3 | Angular Speed ω/ms-2 | Centripetal Force F/N | Elastic Modulus ϵ/Pa | Longtdnl. Stress σ/Pa | Strain Rate τ/% |
|  |  | Absolute Ref. Frame - microcosmic waveforms | | | |  |  |
| e- | 1.4990E+08 | 5.2258E-76 | 6.2832E+00 | 4.3628E-41 | 2.9105E-49 | 6.1806E-58 | 2.1235E-07 |
| H | 7.3192E+04 | 9.1933E-63 | 1.2868E+04 | 1.8299E-34 | 2.5001E-39 | 1.0873E-44 | 4.3490E-04 |
| C | 9.1489E+03 | 3.7656E-59 | 1.0294E+05 | 1.1711E-32 | 1.2801E-36 | 4.4536E-41 | 3.4792E-03 |
| Si | 1.1436E+03 | 1.5424E-55 | 8.2355E+05 | 7.4952E-31 | 6.5540E-34 | 1.8242E-37 | 2.7834E-02 |
| Fe | 7.1476E+01 | 1.0108E-50 | 1.3177E+07 | 1.9188E-28 | 2.6845E-30 | 1.1955E-32 | 4.4534E-01 |
| Br | 3.8121E+01 | 1.2493E-49 | 2.4706E+07 | 6.7457E-28 | 1.7696E-29 | 1.4776E-31 | 8.3501E-01 |
| Ba | 1.1168E+00 | 1.6959E-43 | 8.4331E+08 | 7.8593E-25 | 7.0373E-25 | 2.0057E-25 | 2.8502E+01 |
| Ta | 2.5071E-01 | 6.6774E-41 | 3.7566E+09 | 1.5595E-23 | 6.2203E-23 | 7.8974E-23 | 1.2696E+02 |
| Rn | 1.3960E-01 | 6.9463E-40 | 6.7465E+09 | 5.0300E-23 | 3.6031E-22 | 8.2155E-22 | 2.2801E+02 |
| U | 3.1023E-02 | 2.8484E-37 | 3.0359E+10 | 1.0186E-21 | 3.2833E-20 | 3.3689E-19 | 1.0261E+03 |
| Am | 2.3267E-02 | 9.0024E-37 | 4.0479E+10 | 1.8108E-21 | 7.7827E-20 | 1.0647E-18 | 1.3681E+03 |
|  |  | Visible Ref. Frame -macrocosmic particulate forms | | | | |  |
| e- | 9.1312E-15 | 3.0622E+35 | 1.2783E+01 | 1.4570E-18 | 1.5957E-04 | 5.5625E+09 | 3.4860E+15 |
| H | 4.4586E-18 | 5.3871E+48 | 2.6179E+04 | 6.1113E-12 | 1.3707E+06 | 9.7857E+22 | 7.1393E+18 |
| C | 7.4248E-19 | 7.0050E+51 | 1.5721E+05 | 2.2037E-10 | 2.9681E+08 | 1.2725E+26 | 4.2871E+19 |
| Si | 3.1745E-19 | 2.0962E+53 | 3.6768E+05 | 1.2055E-09 | 3.7975E+09 | 3.8078E+27 | 1.0027E+20 |
| Fe | 1.5966E-19 | 3.2759E+54 | 7.3105E+05 | 4.7656E-09 | 2.9848E+10 | 5.9507E+28 | 1.9936E+20 |
| Br | 1.1160E-19 | 1.3722E+55 | 1.0459E+06 | 9.7537E-09 | 8.7395E+10 | 2.4926E+29 | 2.8521E+20 |
| Ba | 6.4932E-20 | 1.1976E+56 | 1.7976E+06 | 2.8814E-08 | 4.4376E+11 | 2.1754E+30 | 4.9022E+20 |
| Ta | 4.9280E-20 | 3.6097E+56 | 2.3685E+06 | 5.0025E-08 | 1.0151E+12 | 6.5570E+30 | 6.4593E+20 |
| Rn | 4.0167E-20 | 8.1780E+56 | 2.9059E+06 | 7.5297E-08 | 1.8746E+12 | 1.4855E+31 | 7.9246E+20 |
| U | 3.7462E-20 | 1.0808E+57 | 3.1157E+06 | 8.6564E-08 | 2.3107E+12 | 1.9634E+31 | 8.4968E+20 |
| Am | 3.6696E-20 | 1.1740E+57 | 3.1808E+06 | 9.0217E-08 | 2.4585E+12 | 2.1325E+31 | 8.6742E+20 |
|  | Abs. Ref. Frame, Relative Compont. - microcosmic particulat forms | | | | | |  |
| e- | 1.8262E-14 | 1.9139E+34 | 6.3914E+00 | 3.6426E-19 | 1.9946E-05 | 3.4766E+08 | 1.7430E+15 |
| H | 8.9171E-18 | 3.3669E+47 | 1.3090E+04 | 1.5278E-12 | 1.7134E+05 | 6.1161E+21 | 3.5696E+18 |
| C | 2.2237E-18 | 8.7058E+49 | 5.2489E+04 | 2.4568E-11 | 1.1048E+07 | 1.5814E+24 | 1.4314E+19 |
| Si | 2.4832E-19 | 5.5988E+53 | 4.7004E+05 | 1.9702E-09 | 7.9340E+09 | 1.0170E+28 | 1.2819E+20 |
| Fe | 9.2105E-21 | 2.9580E+59 | 1.2673E+07 | 1.4321E-06 | 1.5548E+14 | 5.3733E+33 | 3.4559E+21 |
| Br | 4.8460E-21 | 3.8601E+60 | 2.4086E+07 | 5.1732E-06 | 1.0675E+15 | 7.0119E+34 | 6.5685E+21 |
| Ba | 1.3635E-22 | 6.1590E+66 | 8.5604E+08 | 6.5345E-03 | 4.7924E+19 | 1.1188E+41 | 2.3345E+23 |
| Ta | 3.0564E-23 | 2.4394E+69 | 3.8189E+09 | 1.3005E-01 | 4.2549E+21 | 4.4313E+43 | 1.0414E+24 |
| Rn | 1.7015E-23 | 2.5397E+70 | 6.8598E+09 | 4.1961E-01 | 2.4661E+22 | 4.6133E+44 | 1.8707E+24 |
| U | 3.7800E-24 | 1.0428E+73 | 3.0879E+10 | 8.5026E+00 | 2.2494E+24 | 1.8942E+47 | 8.4210E+24 |
| Am | 2.8349E-24 | 3.2960E+73 | 4.1173E+10 | 1.5116E+01 | 5.3323E+24 | 5.9872E+47 | 1.1228E+25 |

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