



**Hardness Conversion Chart**

| C Scale | A Scale | HV      | Approx.          | 15N Scale           | 30N Scale           | 45N Scale           | Brinell Hardness                |
|---------|---------|---------|------------------|---------------------|---------------------|---------------------|---------------------------------|
|         |         | Vickers | Tensile Strength | Superficial Diamond | Superficial Diamond | Superficial Diamond | Tungsten Carbide Ball 10mm ball |
| 150 KG  | 60 KG   | 10 KG   | PSI              | 15 KG               | 30 KG               | 45 KG               | 3000 KG                         |
| 80      | 92.0    | 1865    | -                | 96.5                | 92.0                | 87.0                | -                               |
| 79      | 91.5    | 1787    | -                | -                   | 91.5                | 86.5                | -                               |
| 78      | 91.0    | 1710    | -                | 96.0                | 91.0                | 85.5                | -                               |
| 77      | 90.5    | 1633    | -                | -                   | 90.5                | 84.5                | -                               |
| 76      | 90.0    | 1556    | -                | 95.5                | 90.0                | 83.5                | -                               |
| 75      | 89.5    | 1478    | -                | -                   | 89.0                | 82.5                | -                               |
| 74      | 89.0    | 1400    | -                | 95.0                | 88.5                | 81.5                | -                               |
| 73      | 88.5    | 1323    | -                | -                   | 88.0                | 80.5                | -                               |
| 72      | 88.0    | 1245    | -                | 94.5                | 87.0                | 79.5                | -                               |
| 71      | 87.0    | 1160    | -                | -                   | 86.5                | 78.5                | -                               |
| 70      | 86.5    | 1076    | -                | 94.0                | 86.0                | 77.5                | -                               |
| 69      | 86.0    | 1004    | -                | 93.5                | 85.0                | 76.5                | -                               |
| 68      | 85.5    | 942     | -                | -                   | 84.5                | 75.4                | -                               |
| 67      | 85.0    | 894     | -                | 93.0                | 83.5                | 74.2                | -                               |
| 66      | 84.5    | 854     | -                | 92.5                | 83.0                | 73.3                | 757                             |
| 65      | 84.0    | 820     | -                | 92.0                | 82.0                | 72.0                | 739                             |
| 64      | 83.5    | 789     | -                | -                   | 81.0                | 71.0                | 722                             |
| 63      | 83.0    | 763     | -                | 91.5                | 80.0                | 69.9                | 706                             |
| 62      | 82.5    | 739     | -                | 91.0                | 79.0                | 68.8                | 688                             |
| 61      | 81.5    | 716     | -                | 90.5                | 78.5                | 67.7                | 670                             |
| 60      | 81.0    | 695     | -                | 90.0                | 77.5                | 66.6                | 654                             |
| 59      | 80.5    | 675     | 351,000          | 89.5                | 76.5                | 65.5                | 634                             |
| 58      | 80.0    | 655     | 338,000          | -                   | 75.5                | 64.3                | 615                             |
| 57      | 79.5    | 636     | 325,000          | 89.0                | 75.0                | 63.2                | 595                             |
| 56      | 79.0    | 617     | 313,000          | 88.5                | 74.0                | 62.0                | 577                             |
| 55      | 78.5    | 598     | 301,000          | 88.0                | 73.0                | 60.9                | 560                             |
| 54      | 78.0    | 580     | 292,000          | 87.5                | 72.0                | 59.8                | 543                             |
| 53      | 77.5    | 562     | 283,000          | 87.0                | 71.0                | 58.6                | 525                             |
| 52      | 77.0    | 545     | 273,000          | 86.5                | 70.5                | 57.4                | 512                             |
| 51      | 76.5    | 528     | 264,000          | 86.0                | 69.5                | 56.1                | 496                             |
| 50      | 76.0    | 513     | 255,000          | 85.5                | 68.5                | 55.0                | 481                             |
| 49      | 75.5    | 498     | 246,000          | 85.0                | 67.5                | 53.8                | 469                             |
| 48      | 74.5    | 485     | 238,000          | 84.5                | 66.5                | 52.5                | 455                             |
| 47      | 74.0    | 471     | 229,000          | 84.0                | 66.0                | 51.4                | 443                             |
| 46      | 73.5    | 458     | 221,000          | 83.5                | 65.0                | 50.3                | 432                             |
| 45      | 73.0    | 446     | 215,000          | 83.0                | 64.0                | 49.0                | 421                             |
| 44      | 72.5    | 435     | 208,000          | 82.5                | 63.0                | 47.8                | 409                             |
| 43      | 72.0    | 424     | 201,000          | 82.0                | 62.0                | 46.7                | 400                             |
| 42      | 71.5    | 413     | 194,000          | 81.5                | 61.5                | 45.5                | 390                             |
| 41      | 71.0    | 403     | 188,000          | 81.0                | 60.5                | 44.3                | 381                             |
| 40      | 70.5    | 393     | 182,000          | 80.5                | 59.5                | 43.1                | 371                             |
| 39      | 69.9    | 382     | 177,000          | 79.9                | 58.6                | 41.9                | 362                             |
| 38      | 69.4    | 372     | 171,000          | 79.4                | 57.7                | 40.8                | 353                             |
| 37      | 68.9    | 363     | 166,000          | 78.8                | 56.8                | 39.6                | 344                             |
| 36      | 68.4    | 354     | 161,000          | 78.3                | 55.9                | 38.4                | 336                             |
| 35      | 67.9    | 345     | 156,000          | 77.7                | 55.0                | 37.2                | 327                             |
| 34      | 67.4    | 336     | 152,000          | 77.2                | 54.2                | 36.1                | 319                             |
| 33      | 66.8    | 327     | 149,000          | 76.6                | 53.3                | 34.9                | 311                             |
| 32      | 66.3    | 318     | 146,000          | 76.1                | 52.1                | 33.7                | 301                             |
| 31      | 65.8    | 310     | 141,000          | 75.6                | 51.3                | 32.5                | 294                             |
| 30      | 65.3    | 302     | 138,000          | 75.0                | 50.4                | 31.3                | 286                             |
| 29      | 64.6    | 294     | 135,000          | 74.5                | 49.5                | 30.1                | 279                             |
| 28      | 64.3    | 286     | 131,000          | 73.9                | 48.6                | 28.9                | 271                             |
| 27      | 63.8    | 279     | 128,000          | 73.3                | 47.7                | 27.8                | 264                             |
| 26      | 63.3    | 272     | 125,000          | 72.8                | 46.8                | 26.7                | 258                             |
| 25      | 62.8    | 266     | 123,000          | 72.2                | 45.9                | 25.5                | 253                             |
| 24      | 62.4    | 260     | 119,000          | 71.6                | 45.0                | 24.3                | 247                             |
| 23      | 62.0    | 254     | 117,000          | 71.0                | 44.0                | 23.1                | 243                             |
| 22      | 61.5    | 248     | 115,000          | 70.5                | 43.2                | 22.0                | 237                             |
| 21      | 61.0    | 243     | 112,000          | 69.9                | 42.3                | 20.7                | 231                             |
| 20      | 60.5    | 238     | 110,000          | 69.4                | 41.5                | 19.6                | 226                             |

The conversion values are approximate values only. For further information see ASTM E-140 and A-370