

Material Hardness & Tensile Strength Cross-Reference Chart*

| HARDNESS | | | | TENSILE STRENGTH |
|----------|---------|----------|-----|------------------|
| Brinell | Vickers | Rockwell | | PSI |
| | | HRB | HRC | |

| | | | | |
|------|-----|------|------|---------|
| 76 | 80 | | | |
| 80.7 | 85 | 41.0 | | |
| 85.5 | 90 | 48.0 | | |
| 90.2 | 95 | 52.0 | | |
| 95 | 100 | 58.2 | | |
| 98.8 | 105 | | | |
| 105 | 110 | 62.3 | | |
| 109 | 115 | | | |
| 114 | 120 | 66.7 | | 57,000 |
| 119 | 125 | | | 59,000 |
| 124 | 130 | 71.2 | | 61,000 |
| 128 | 135 | | | 63,000 |
| 133 | 140 | 75.0 | | 66,000 |
| 138 | 145 | | | 68,000 |
| 143 | 150 | 78.7 | | 70,000 |
| 147 | 155 | | | 72,000 |
| 152 | 160 | 81.7 | | 73,000 |
| 156 | 165 | | | 74,000 |
| 162 | 170 | 85.0 | | 79,000 |
| 166 | 175 | | | 81,000 |
| 171 | 180 | 87.1 | | 83,000 |
| 176 | 185 | | | 86,000 |
| 181 | 190 | 89.5 | | 88,000 |
| 185 | 195 | | | 90,000 |
| 190 | 200 | 91.6 | | 91,000 |
| 195 | 205 | 92.6 | | 92,000 |
| 199 | 210 | 93.5 | | 95,000 |
| 204 | 215 | 94.0 | | 98,000 |
| 209 | 220 | 95.0 | | 102,000 |
| 214 | 225 | 96.0 | | 105,000 |
| 219 | 230 | 96.7 | | 107,000 |
| 223 | 235 | | | 109,000 |
| 228 | 240 | 98.1 | 20.3 | 111,000 |
| 233 | 245 | | 21.3 | 113,000 |
| 238 | 250 | 99.5 | 22.2 | 116,000 |
| 242 | 255 | | 23.1 | 118,000 |
| 247 | 260 | 101 | 24.0 | 122,000 |
| 252 | 265 | | 24.8 | 124,000 |
| 257 | 270 | 102 | 25.6 | 126,000 |
| 261 | 275 | | 26.4 | 129,000 |
| 266 | 280 | 104 | 27.1 | 131,000 |
| 271 | 285 | | 27.8 | 134,000 |
| 276 | 290 | 105 | 28.5 | 138,000 |
| 280 | 295 | | 29.2 | 139,000 |
| 285 | 300 | | 29.8 | 142,000 |
| 295 | 310 | | 31.0 | 146,000 |
| 304 | 320 | | 32.2 | 150,000 |
| 314 | 330 | | 33.3 | 154,000 |
| 323 | 340 | | 34.4 | 159,000 |
| 333 | 350 | | 35.5 | 164,000 |
| 342 | 360 | | 36.6 | 169,000 |
| 352 | 370 | | 37.7 | 176,000 |
| 361 | 380 | | 38.8 | 181,000 |
| 371 | 390 | | 39.8 | 185,000 |
| 380 | 400 | | 40.8 | 191,000 |
| 390 | 410 | | 41.8 | 198,000 |
| 399 | 420 | | 42.7 | 202,000 |
| 409 | 430 | | 43.6 | 205,000 |
| 418 | 440 | | 44.5 | 208,000 |
| 428 | 450 | | 45.3 | 212,000 |
| 437 | 460 | | 46.1 | 219,000 |
| 447 | 470 | | 46.9 | 225,000 |
| 456 | 480 | | 47.7 | 232,000 |
| 463 | 490 | | 48.4 | 235,000 |
| 475 | 500 | | 49.1 | 238,000 |
| 485 | 510 | | 49.8 | 245,000 |
| 494 | 520 | | 50.5 | 250,000 |
| 504 | 530 | | 51.1 | 254,000 |
| 513 | 540 | | 51.7 | 259,000 |

| HARDNESS | | | | TENSILE STRENGTH |
|----------|---------|----------|-----|------------------|
| Brinell | Vickers | Rockwell | | PSI |
| | | HRB | HRC | |

| | | | | |
|-----|-----|--|------|---------|
| 523 | 550 | | 52.3 | 264,000 |
| 532 | 560 | | 53.0 | 269,000 |
| 542 | 570 | | 53.6 | 274,000 |
| 551 | 580 | | 54.1 | 279,000 |
| 561 | 590 | | 54.7 | 284,000 |
| 570 | 600 | | 55.2 | 287,000 |
| 580 | 610 | | 55.7 | 292,000 |
| 589 | 620 | | 56.3 | 294,000 |
| 599 | 630 | | 56.8 | 304,000 |
| 608 | 640 | | 57.3 | 310,000 |
| 618 | 650 | | 57.8 | 315,000 |
| | 660 | | 58.3 | 326,000 |
| | 670 | | 58.8 | |
| | 680 | | 59.2 | |
| | 690 | | 59.7 | |
| | 700 | | 60.1 | |
| | 720 | | 61.0 | |
| | 740 | | 61.8 | |
| | 760 | | 62.5 | |
| | 780 | | 63.3 | |
| | 800 | | 64.0 | |
| | 820 | | 64.7 | |
| | 840 | | 65.3 | |
| | 860 | | 65.9 | |
| | 880 | | 66.4 | |
| | 900 | | 67.0 | |
| | 920 | | 67.5 | |
| | 940 | | 68.0 | |

* Figures listed are approximate. Actual conversions may vary by material and alloy content.

$$\text{PSI (pound / in}^2\text{)} = \text{N/mm}^2 \times 145.0377$$

$$\text{N/mm}^2 = \text{pound / in}^2 \div 145.0377$$