



Basic Heat Treatment for Tool Steels

| Grade | Pre-heat Temperature °F | Austenitizing Temperature °F | Quench | Tempering Temperature °F | Annealing Temperature °F | Typical Annealed Hardness (BHN) |
|---------|-------------------------|------------------------------|--------|--------------------------|--------------------------|---------------------------------|
| O1 | 1250-1350 | 1450-1500 | Oil | 400-500 | 1400-1450 | 185-212 |
| L6 | 1200-1300 | 1500-1550 | Oil | 400-600 | 13575-1425 | 185-235 |
| S5 | 1250-1350 | 1550-1600 | Oil | 400-600 | 1400-1450 | 195-229 |
| S7 | 1350-1450 | 1725-1775 | Air | 400-600 | 1500-1550 | 185-229 |
| A2 | 1350-1450 | 1750-1800 | Air | 400-600 | 1550-1600 | 200-248 |
| D2 | 1400-1450 | 1825-1850 | Air | 400-600 | 1550-1600 | 215-255 |
| SB Wear | 1500-1550 | 1875-2050 | Air | 975-1050 | 1550-1600 | 220-255 |
| PSB 22 | 1500-1550 | 1850-1950 | Air | 975-1050 | 1550-1600 | 215-255 |
| PSF 27 | 1500-1550 | 1825-1875 | Air | 400-600 | 1550-1600 | 215-255 |
| PD #1 | 1500-1550 | 1875-2050 | Air | 1000-1050 | 1550-1600 | 215-255 |
| PM A11 | 1500-1550 | 1950-2150 | Air | 1000-1050 | 1600-1650 | 245-275 |
| PM 9 | 1500-1550 | 1950-2050 | Air | 1000-1050 | 1600-1650 | 225-255 |
| M2 | 1500-1550 | 2050-2200 | Air | 1000-1075 | 1550-1600 | 215-245 |
| PM M4 | 1500-1550 | 1950-2200 | Air | 1000-1075 | 1600-1650 | 225-255 |
| PM T15 | 1500-1550 | 2150-2250 | Air | 1000-1075 | 1600-1650 | 245-275 |
| 52100 | 1200-1250 | 1500-1550 | Oil | 400-600 | 1400-1450 | 185-215 |

Note: Temperatures are for general reference only. Reference complete data sheet for detailed information.