

HAYNES[®] 214[®] alloy

Creep and Rupture Properties

Solution Annealed Sheet

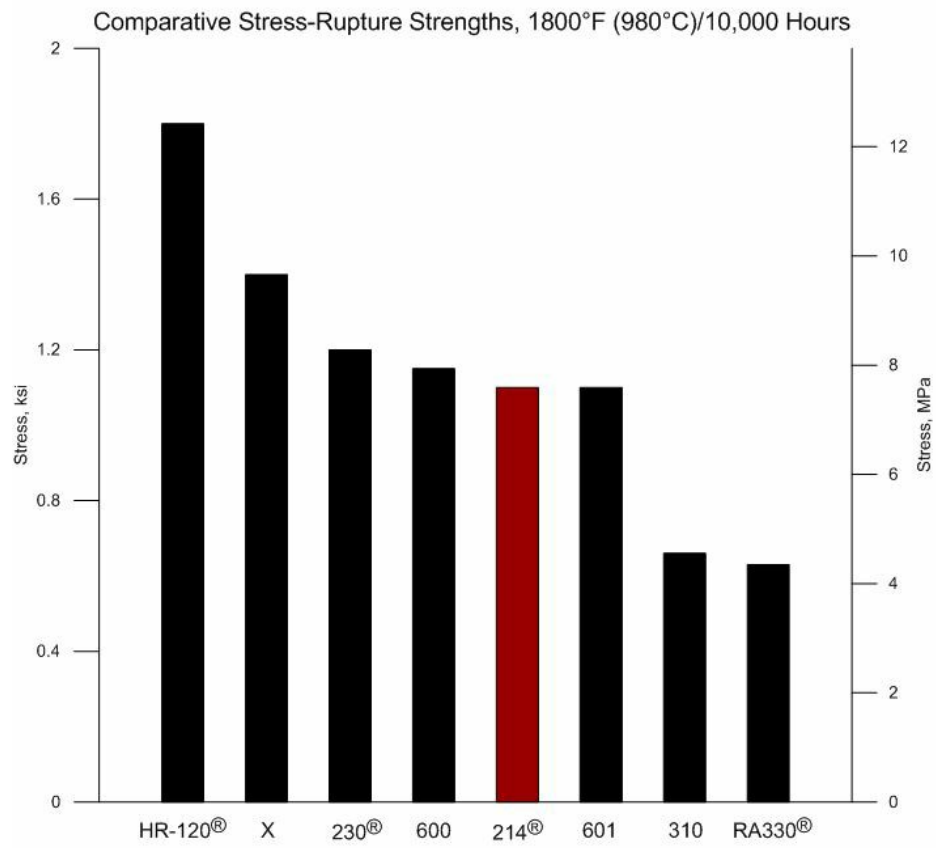
| Temperature | | Creep | Approximate Initial Stress to Produce Specified Creep in | | | | | | | |
|-------------|------|-------|--|------|-------|------|---------|------|----------|------|
| | | | 10 h | | 100 h | | 1,000 h | | 10,000 h | |
| °F | °C | % | ksi | MPa | ksi | MPa | ksi | MPa | ksi | MPa |
| 1200 | 649 | 0.5 | - | - | - | - | 46 | 317 | - | - |
| | | 1 | - | - | - | - | 53 | 365 | - | - |
| | | R | - | - | - | - | 57 | 393 | 37 | 255 |
| 1300 | 704 | 0.5 | - | - | 45 | 310 | 30 | 207 | - | - |
| | | 1 | - | - | 49 | 338 | 32 | 221 | - | - |
| | | R | - | - | 51 | 352 | 33 | 228 | 21* | 145* |
| 1400 | 760 | 0.5 | 38 | 262 | 26 | 179 | 17.5 | 121 | 11.2* | 77* |
| | | 1 | 42 | 290 | 29 | 200 | 18.8 | 130 | 11.7 | 81 |
| | | R | 50 | 345 | 33 | 228 | 19.8 | 137 | 12.3 | 85 |
| 1500 | 816 | 0.5 | 23 | 159 | 15 | 103 | 8.9 | 61 | - | - |
| | | 1 | 27 | 186 | 16.5 | 114 | 9.9 | 68 | - | - |
| | | R | 32 | 221 | 20 | 138 | 11.5 | 79 | 7.0 | 48 |
| 1600 | 871 | 0.5 | 12.7 | 88 | 7.5 | 52 | 4.5 | 31 | - | - |
| | | 1 | 15.2 | 105 | 8.7 | 60 | 4.9 | 34 | - | - |
| | | R | 21* | 145* | 11.8 | 81 | 6.3 | 43 | 3.4 | 23 |
| 1700 | 927 | 0.5 | 6.5 | 45 | 3.7 | 26 | 2.1 | 14 | - | - |
| | | 1 | 7.5 | 52 | 4.2 | 29 | 2.4 | 17 | - | - |
| | | R | 9.8 | 68 | 5.6 | 39 | 3.1 | 21 | 1.8* | 12* |
| 1800 | 982 | 0.5 | 1.9 | 13 | 1.2 | 8.3 | 0.75* | 5.2* | - | - |
| | | 1 | 2.2 | 15 | 1.3 | 9.0 | 0.83* | 5.7* | - | - |
| | | R | 4.8 | 33 | 2.7 | 19 | 1.7 | 12 | 1.0 | 6.9 |
| 1900 | 1038 | 0.5 | 1.2 | 8.3 | 0.74* | 5.1* | 0.48* | 3.3* | - | - |
| | | 1 | 1.4 | 10 | 0.88 | 6.1 | 0.55* | 3.8* | - | - |
| | | R | 3.3* | 23* | 2.0 | 14 | 1.2 | 8.3 | 0.76 | 5.2 |
| 2000 | 1093 | 0.5 | 0.75 | 5.2 | 0.55 | 3.8 | 0.32 | 2.2 | - | - |
| | | 1 | 0.95 | 6.6 | 0.63 | 4.3 | 0.43 | 3.0 | - | - |
| | | R | 2.2* | 15* | 1.5 | 10 | 0.94 | 6.5 | 0.61 | 4.2 |
| 2100 | 1149 | 0.5 | 0.53 | 3.7 | 0.35 | 2.4 | - | - | - | - |
| | | 1 | 0.64 | 4.4 | 0.42 | 2.9 | 0.27 | 1.9 | - | - |
| | | R | 1.6* | 11* | 1.1 | 7.6 | 0.69 | 4.8 | 0.44 | 3.0 |
| 2200 | 1204 | 0.5 | - | - | - | - | - | - | - | - |
| | | 1 | - | - | - | - | - | - | - | - |
| | | R | 1.1* | 7.6* | 0.76 | 5.2 | 0.49 | 3.4 | - | - |

*Significant extrapolation

Solution Annealed Plate

| Temperature | | Creep | Approximate Initial Stress to Produce Specified Creep in | | | | | | | |
|-------------|------|-------|--|------|-------|------|---------|-----|----------|------|
| | | | 10 h | | 100 h | | 1,000 h | | 10,000 h | |
| °F | °C | % | ksi | MPa | ksi | MPa | ksi | MPa | ksi | MPa |
| 1400 | 760 | 0.5 | 41* | 283* | 29 | 200 | 21 | 145 | 14* | 97* |
| | | 1 | 44* | 303* | 32 | 221 | 23 | 159 | 14.5* | 100* |
| | | R | 55* | 379* | 38 | 262 | 24 | 165 | 15.0 | 103 |
| 1500 | 816 | 0.5 | 26 | 179 | 19 | 131 | 12.8 | 88 | 7.8* | 54* |
| | | 1 | 28 | 193 | 20.5 | 141 | 13.8 | 95 | 8.4* | 58* |
| | | R | 35 | 241 | 23 | 159 | 15.0 | 103 | 9.0* | 62* |
| 1600 | 871 | 0.5 | 17* | 117* | 11.2 | 77 | 6.2 | 43 | 3.3 | 23 |
| | | 1 | 20* | 138* | 12.2 | 84 | 6.7 | 46 | 3.7 | 26 |
| | | R | 24* | 165* | 15.0 | 103 | 8.5 | 59 | 4.6 | 32 |
| 1700 | 927 | 0.5 | 8.5 | 59 | 4.9 | 34 | 2.6 | 18 | 1.4 | 10 |
| | | 1 | 9.7 | 67 | 5.3 | 37 | 2.9 | 20 | 1.6 | 11 |
| | | R | 11.5 | 79 | 7.1 | 49 | 4.2 | 29 | 2.4 | 17 |
| 1800 | 982 | 0.5 | 2.0 | 14 | 1.3 | 9.0 | 0.85 | 5.9 | - | - |
| | | 1 | 2.2 | 15 | 1.5 | 10 | 1.00 | 6.9 | 0.68* | 4.7* |
| | | R | 3.9 | 27 | 2.9 | 20 | 1.8 | 12 | 1.1 | 7.6 |
| 1900 | 1038 | 0.5 | 1.2 | 8.3 | 0.77 | 5.3 | 0.50 | 3.4 | - | - |
| | | 1 | 1.4 | 10 | 0.91 | 6.3 | 0.60 | 4.1 | 0.39 | 2.7 |
| | | R | 2.9 | 20 | 1.9 | 13 | 1.2 | 8.3 | 0.8 | 5.5 |
| 2000 | 1093 | 0.5 | 0.77 | 5.3 | 0.48 | 3.3 | 0.29 | 2.0 | - | - |
| | | 1 | 0.93 | 6.4 | 0.62 | 4.3 | 0.41 | 2.8 | 0.20* | 1.4* |
| | | R | 2.1* | 14* | 1.4 | 9.7 | 0.90 | 6.2 | 0.60 | 4.1 |
| 2100 | 1149 | 0.5 | 0.47 | 3.2 | 0.27* | 1.9* | - | - | - | - |
| | | 1 | 0.60* | 4.1* | 0.35 | 2.4 | - | - | - | - |
| | | R | 1.6* | 11* | 1.0 | 6.9 | 0.68 | 4.7 | 0.44 | 3.0 |
| 2200 | 1204 | 0.5 | 0.35 | 2.4 | 0.19* | 1.3* | - | - | - | - |
| | | 1 | 0.45* | 3.1* | 0.26 | 1.8 | - | - | - | - |
| | | R | 1.1* | 7.6* | 0.77 | 5.3 | 0.5 | 3.4 | 0.33 | 2.3 |

*Significant extrapolation



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