

# Thermal Expansion

in/in °F x 10-6

| Alloy                       | 200  | 400  | 600  | 800  | 1000 | 1200  | 1400  | 1600  | 1800 | 2000  |
|-----------------------------|------|------|------|------|------|-------|-------|-------|------|-------|
| 304                         | 9.6  | -    | 9.9  | -    | 10.2 | 10.4  | -     | -     | -    | -     |
| 316                         | 8.9  | -    | 9    | -    | 9.7  | 10.3  | -     | -     | -    | -     |
| 2205                        | 7.2  | 7.5  | -    | -    | -    | -     | -     | -     | -    | -     |
| 321                         | 9.3  | 9.4  | 9.5  | 10   | 10.3 | 10.6  | 10.9  | 11.1  | 11.4 | -     |
| 309                         | 8.8  | 9    | 9.3  | -    | 9.7  | -     | -     | 10.1  | -    | -     |
| 310                         | 8.4  | 8.8  | 8.95 | 9.2  | 9.5  | 9.8   | 10.05 | 10.15 | 10.5 | 10.6  |
| SA-387                      | 6.7  | 7.1  | 7.4  | -    | 7.8  | -     | -     | -     | -    | -     |
| RA 253 MA <sup>®</sup>      | 9.06 | 9.34 | 9.59 | 9.81 | 9.97 | 10.14 | 10.3  | 10.5  | 10.8 | -     |
| 410                         | 5.5  | -    | -    | -    | -    | 6.5   | -     | -     | -    | -     |
| RA 602 CA <sup>®</sup>      | 6.6  | 7.5  | 7.8  | 8.1  | 8.2  | 8.5   | 9     | 9.5   | 9.7  | 9.8   |
| RA330 <sup>®</sup>          | 8.3  | 8.6  | 8.9  | -    | 9.3  | 9.6   | -     | 9.8   | 10   | -     |
| HR-120 <sup>®</sup>         | 7.95 | 8.29 | 8.56 | 8.8  | 8.98 | 9.24  | 9.52  | 9.72  | 9.87 | -     |
| 800AT                       | 7.9  | 8.8  | 9    | 9.2  | 9.4  | 9.6   | 9.9   | 10.2  | -    | -     |
| 446                         | 5.6  | 5.7  | -    | 6    | 6.1  | 6.3   | 6.4   | 6.7   | 7.3  | -     |
| 600                         | 7.4  | 7.7  | 7.9  | 8.1  | 8.4  | 8.6   | 8.9   | 9.1   | 9.3  | -     |
| 601                         | 7.6  | 8.01 | 8.11 | 8.3  | 8.5  | 8.87  | 9.19  | 9.51  | 9.82 | 10.18 |
| RA333 <sup>®</sup>          | 7    | -    | -    | -    | 8.6  | 9     | 9.3   | 9.4   | 9.7  | -     |
| Cast HH                     | -    | -    | -    | -    | 9.5  | 9.7   | 9.9   | 10.2  | 10.5 | 10.7  |
| Cast HK                     | -    | -    | -    | -    | 9.4  | 9.6   | 9.8   | 10    | 10.2 | 10.4  |
| Cast HT                     | 7.9  | 8.14 | 8.37 | 8.61 | 8.85 | 9.09  | 9.33  | 9.56  | 9.8  | 10.04 |
| Cast HP                     | -    | -    | -    | -    | 9.2  | 9.5   | 9.8   | 10    | 10.3 | 10.6  |
| 825                         | 7.8  | 8.3  | 8.5  | 8.7  | 8.8  | 9.1   | 9.5   | 9.7   | -    | -     |
| Alloy 20                    | 8.2  | 8.4  | 8.65 | -    | 8.95 | 9.15  | 9.3   | 9.5   | -    | -     |
| AL-6XN <sup>®</sup>         | 7.9  | 8.37 | 8.6  | 8.8  | 8.96 | 9.3   | -     | -     | -    | -     |
| TiGr 2                      | 4.8  | -    | 5.1  | -    | 5.4  | 5.6   | -     | -     | -    | -     |
| Alloy X                     | 7.7  | 7.8  | 7.9  | 8.2  | 8.4  | 8.6   | 8.8   | 9     | 9.2  | -     |
| 625                         | 7.1  | 7.3  | 7.4  | 7.6  | 7.8  | 8.2   | 8.5   | 8.8   | -    | -     |
| X-750                       | 7.6  | 7.7  | 7.9  | 8.0  | 8.2  | 8.4   | 8.9   | 9.3   | 9.8  | -     |
| C263                        | 6.1  | 6.7  | 7    | 7.1  | 7.6  | 7.9   | 8.4   | 9.1   | 9.9  | -     |
| 718                         | 7.3  | 7.5  | 7.7  | 8    | 8.1  | 8.4   | 8.9   | 9.5   | 9.8  | 10    |
| René 41                     | 6.6  | 6.9  | 7.1  | 7.3  | 7.7  | 7.9   | 8.3   | 8.8   | 9.3  | 9.9   |
| WASPALLOY                   | 6.8  | 7    | 7.3  | 7.6  | 7.8  | 8.1   | 8.4   | 8.9   | 9.7  | 10.4  |
| A-286                       | 9.2  | 9.35 | 9.5  | 9.65 | 9.8  | 9.9   | 10.3  | -     | -    | -     |
| 188                         | 6.6  | 7    | 7.4  | 7.8  | 8.2  | 8.6   | 9     | 9.4   | 9.9  | 10.3  |
| L-605                       | 6.8  | 7.2  | 7.6  | 7.8  | 8    | 8.2   | 8.6   | 9.1   | 9.4  | 9.8   |
| MULTIMET <sup>®</sup> N-155 | 7.9  | 8.4  | 8.5  | 8.7  | 9.1  | 9.5   | 9.7   | 9.9   | 10.1 | 10.3  |
| Haynes <sup>®</sup> 556     | 8.1  | 8.2  | 8.4  | 8.6  | 8.8  | 9     | 9.2   | 9.4   | 9.5  | 9.6   |
| Haynes <sup>®</sup> 230     | 7    | 7.2  | 7.4  | 7.6  | 7.9  | 8.1   | 8.3   | 8.6   | 8.9  | -     |
| 617                         | 6.4  | 7    | 7.4  | 7.6  | 7.7  | 8.0   | 8.4   | 8.7   | 9    | 9.2   |
| W                           | -    | -    | -    | 7.3  | 7.4  | 7.4   | 7.8   | 8.2   | 8.4  | -     |
| Haynes <sup>®</sup> 214     | -    | 7.4  | -    | 7.9  | 8.2  | 8.6   | 9     | 9.6   | 10.2 | 11.1  |