



STAINLESS STEEL ALLOY GUIDE

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| STAINLESS STEEL | | | | | | | | |
|---------------------|---------|-----------|-------|---------|---------|-------|-------|-------------------------|
| ALLOY NUMBER | 201 | 301 | 302 | 304 | 304L | 316 | 316L | 321 |
| ASTM B | A666 | A666 | A666 | A666 | A666 | A666 | A666 | A167 |
| AMS SPEC NO. | | 5517-5519 | 5516 | 5513 | 5511 | 5524 | 5507 | 5510 |
| CHEMICAL PROPERTIES | | | | | | | | |
| C | 0.15 | 0.15 | 0.15 | 0.08 | 0.03 | 0.08 | 0.03 | 0.08 |
| Cr | 17.00 | 17.00 | 18.00 | 19.00 | 19.00 | 17.00 | 17.00 | 18.00 |
| Ni | 4.50 | 7.00 | 9.00 | 9.25 | 10.00 | 12.00 | 12.00 | 10.50 |
| Mn | 6.50 | 2 MAX | 2 MAX | 2 MAX | 2 MAX | 2 MAX | 2 MAX | 2 MAX |
| Al | | | | | | | | |
| Mo | | | | | | 2.50 | 2.50 | |
| N | .25 MAX | | | .10 MAX | .10 MAX | | | .10 MAX |
| Other | | | | | | | | Ti 5X [C+N] Min .70 Max |

| MECHANICAL PROPERTIES | | | | | | | | | |
|-----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|
| DENSITY | | 0.287 | 0.290 | 0.287 | 0.287 | 0.287 | 0.286 | 0.286 | 0.285 |
| MOD. OF ELAST | | 28.6 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| ELECTRICAL COND | | 423 | 432 | 432 | 432 | 432 | 444 | 444 | 432 |
| THERMAL COND. | | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.3 | 9.3 | 9.3 |
| COEF. OF THERM EXP. | | 8.7 | 9.4 | 9.6 | 9.6 | 9.6 | 8.9 | 8.9 | 9.3 |

| | | | | | | | | | |
|--------------|----------|---------|---------|---------|---------|---------|---------|---------|--------|
| ANNEALED | TENSILE | 95 MIN | 90-115 | 75-110 | 75-100 | 70-100 | 75-100 | 70-100 | 75-110 |
| | YIELD | 45 MIN | 30 MIN | 30-60 | 30 MIN | 25 MIN | 30 MIN | 25 MIN | 30 MIN |
| | ELONG. | 40 MIN | 40 MIN | 40 MIN | 40 MIN | 40 MIN | 40 MIN | 40 MIN | 40 MIN |
| | ROCKWELL | B66 MAX | B95 | B92 | B92 | B88 | B95 | B95 | B95 |
| 1/4 HARD | TENSILE | 125-150 | 125-150 | 125-150 | 125-150 | 125-150 | 125-150 | 125-150 | |
| | YIELD | 75 MIN | 75 MIN | 75 MIN | 75 MIN | 75 MIN | 75 MIN | 75 MIN | |
| | ELONG. | 25 MIN | 25 MIN | 10 MIN | 10 MIN | 8 MIN | 10 MIN | 8 MIN | |
| | ROCKWELL | | B95 | B92 | B92 | B88 | B95 | B95 | |
| 1/2 HARD | TENSILE | 150-175 | 150-175 | 150-175 | 150-175 | 150-175 | 150-175 | 150-175 | |
| | YIELD | 110 MIN | 110 MIN | 110 MIN | 110 MIN | 110 MIN | 110 MIN | 110 MIN | |
| | ELONG. | 15 MIN | 15 MIN | 9 MIN | 6 MIN | 5 MIN | 6 MIN | 5 MIN | |
| | ROCKWELL | | B95 | B92 | B92 | B88 | B95 | B95 | |
| 3/4 HARD | TENSILE | 175-200 | 175-200 | 175-200 | 175-200 | 175-200 | 175-200 | 175-200 | |
| | YIELD | 135 MIN | 135 MIN | 135 MIN | 135 MIN | 135 MIN | 135 MIN | 135 MIN | |
| | ELONG. | 10 MIN | 10 MIN | 5 MIN | 3 MIN | 2 MIN | 3 MIN | 2 MIN | |
| | ROCKWELL | | B95 | B92 | | | | | |
| FULL HARD | TENSILE | 185 MIN | 185 MIN | 185 MIN | 185 MIN | 185 MIN | 185 MIN | 185 MIN | |
| | YIELD | 140 MIN | 140 MIN | 140 MIN | 140 MIN | 140 MIN | 140 MIN | 140 MIN | |
| | ELONG. | 8 MIN | 8 MIN | 3 MIN | 1 MIN | 1 MIN | 1 MIN | 1 MIN | |
| | ROCKWELL | | B95 | B92 | | | | | |
| SPRING | TENSILE | 200 MIN | 200 MIN | 200 MIN | 200 MIN | 200 MIN | | | |
| | YIELD | | | 185 MIN | | | | | |
| | ELONG. | 1 MIN | 1 MIN | 1 MIN | 1 NOM | 1 NOM | | | |
| | ROCKWELL | 56-64 | 56-64 | 56-64 | | | | | |
| EXTRA SPRING | TENSILE | 52 MIN | 52 MIN | 52 MIN | | | | | |
| | YIELD | 51 MIN | 51 MIN | 51 MIN | | | | | |
| | ELONG. | 3 MAX | 3 MAX | 3 MAX | | | | | |
| | ROCKWELL | 61 MIN | 61 MIN | 61 MIN | | | | | |