

OIL TEMPERED CHROME SILICON WIRE COMMERCIAL QUALITY

This material is designed for springs that must withstand considerable shock and extreme heat. Chrome silicon can be used at temperatures up to 50⁰ F higher than chrome vanadium. Recommendations for heat treatment: Immediately after coiling, the springs should be stress relieved at about 400°C. (750°F.) for 30 minutes. After shot peening, the springs should be stress relieved at about 250°C.(480°F.) for 30 minutes. Wire is available in size ranges from .018”-.625”.

| Chemical Composition Per ASTM-A-401 *Max values | | Dimensional Tolerances | Tolerance (inch) |
|--|--------------|-------------------------|------------------|
| Carbon | 0.51 - 0.59% | .032 to .075, incl | +/- .001 |
| Manganese | 0.60 - 0.80% | Over .075 to .438, incl | +/- .002 |
| Phosphorus | 0.035% * | Over .438 | +/- .003 |
| Sulfur | 0.040% * | | |
| Silicon | 1.20 - 1.60% | | |
| Chromium | 0.60 - 0.80% | | |

Tensile Strength Table (ASTM-A-401)

| Dia. Inch | Tensile Min PSI | Tensile Max PSI | Dia. Inch | Tensile Min PSI | Tensile Max PSI |
|--------------|--------------------|--------------------|--------------|--------------------|--------------------|
| .032 | 300,000 | 325,000 | .192 | 260,000 | 283,000 |
| .041 | 298,000 | 323,000 | .219 | 255,000 | 278,000 |
| .054 | 292,000 | 317,000 | .250 | 250,000 | 275,000 |
| .062 | 290,000 | 315,000 | .312 | 245,000 | 270,000 |
| .080 | 285,000 | 310,000 | .375 | 240,000 | 265,000 |
| .092 | 280,000 | 305,000 | .438 | 235,000 | 260,000 |
| .120 | 275,000 | 300,000 | .500 | 230,000 | 255,000 |
| .135 | 270,000 | 295,000 | .562 | 228,000 | 253,000 |
| .162 | 265,000 | 290,000 | .625 | 226,000 | 251,000 |
| .177 | 260,000 | 285,000 | | | |

The above charts are intended to provide general background information. You should also review the appropriate material specification. Please contact Gibbs if you have any questions.