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| **Elgiloy Specialty Metals**  **Hampshire Mill** | |
| **Alloy 302 Stainless Steel** | **UNS: S30200** |
| Alloy represents an excellent combination of corrosion resistance and fabricability. Past users of 302 stainless are generally now using 304 alloy since AOD technology has made lower carbon levels more easily attainable and economical. There are instances, such as in temper rolled products, when 302 alloy is preferred over 304 since the higher carbon permits meeting of yield and tensile strength requirements while maintaining a higher level of ductility (elongation) versus that of the lower carbon T304. The true 302 melt is rare as most are using 304 to apply as 304 and 302 applications. All 304 can qualify as 302 since it is a subset of 302 however not all 302 can be 304. | |

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| Nominal Composition | | | | | | | | | | | | | | | | | | | | | |
|  | **C** | | **Mn** | | **P** | | **S** | | | **Si** | **Cr** | | | **Ni** | | **N** | **Fe** | |  |  | |
| min | - | | - | | - | | - | | | - | 17.0 | | | 8.0 | | - | - | |  |  | |
| max | .15 | | 2.0 | | 0.045 | | 0.030 | | | 0.75 | 19.0 | | | 10.0 | | 0.10 | BAL | |  |  | |
| Physical Properties | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | At 70oF | | | | | | At 20oC | | | | | | | | |
| Density | | | | | | | | 0.285 lb./in3 | | | | | | 7.90 g/cm3 | | | | | | | | |
| Modulus of Elasticity (E) | | | | | | | | 29.0 x 103 ksi in tension | | | | | | 200 x MPa in tension | | | | | | | | |
| Coefficient of Expansion | | | | | | | | 9.2 x microinches/in.-oF (68-212oF) | | | | | | 16.6 μm/m-oC (20-100oC) | | | | | | | | |
| Electrical Resistivity | | | | | | | | 28.3 μ ohm.in | | | | | | 72 μ ohm.cm | | | | | | | | |
| Thermal Conductivity | | | | | | | | 9.4 Btu-in./ft.2hr.-oF (100oC) | | | | | | 16.2 W/m-K (100oC) | | | | | | | | |
| Applicable Specifications | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | SA-240, ASTM A240 | | | | | | | | | | | | | | | | | | |
| Typical Mechanical Properties – Typical Room Temperature Mechanical Properties | | | | | | | | | | | | | | | | | | | | | | |
| Condition | | | | | | **Tensile Strength (UTS)** | | | | | **0.2% YS** | | | | **Elongation% in 2” (50.8 mm)** | | | | | **Hardness Rockwell** | | |
| Annealed | | | | | | 95 ksi ( 655 MPa) | | | | | 42 ksi ( 290 MPa) | | | | 55 | | | | | 84 HRBW | | |
| Typical mechanical properties are based on AK source, ASTM A240 | | | | | | | | | | | | | | | | | | | | | | |
| For further information email: [hampinfo@elgiloy.com](mailto:hampinfo@elgiloy.com) or  call: (847) 453-0500 | | | | | | | | | Elgiloy Specialty Metals  Hampshire Mill  One Hauk Road  Hampshire, IL 60140 USA | | | | | | | [**www.esmhampshire.com**](http://www.esmhampshire.com) | | | | | | |

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| The information and data in this product data sheet are accurate to the best of our knowledge and belief, but are intended for general information only. Applications suggested for the materials are described only to help readers make their own evaluations and decisions, and are neither guarantees nor to be construed as express or implied warranties of suitability for these or other applications. Data was obtained from our melt sources with data referring to mechanical properties and chemical analyses are the result of tests performed on specimens obtained from specific locations with prescribed sampling procedures; any warranty thereof is limited to the values obtained at such locations and by such procedures. There is no warranty with respect to values of the materials at other locations. Further information should be sought from the melt sources. |