

## Outokumpu 4307 Cr-Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

### Material Notes:

General purpose steel with good corrosion resistance. Applications: Wide variety of applications in construction, chemical, petroleum, automobile, and domestic appliance markets. Available in hot rolled plate (Quarto), hot rolled strip/sheet (CPP), cold rolled strip/sheet, cold rolled narrow strip, bar, and rod forms.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Outokumpu-4307-Cr-Ni-Austenitic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_Outokumpu-4307-Cr-Ni-Austenitic-Stainless-Steel.php)

| Physical Properties | Metric    | English                  | Comments |
|---------------------|-----------|--------------------------|----------|
| Density             | 7.90 g/cc | 0.285 lb/in <sup>3</sup> | RT       |

| Mechanical Properties      | Metric               | English              | Comments   |
|----------------------------|----------------------|----------------------|--|
| Hardness, Brinell          | 165                  | 165                  | Outokumpu Typical, 20°C, Hot rolled plate (Quarto); EN 10003-1 |
|                            | 175                  | 175                  | Outokumpu Typical, 20°C, Cold rolled strip/sheet; EN 10003-1   |
| Tensile Strength, Ultimate | >= 500 MPa           | >= 72500 psi         | EN 10002-1   |
|                            | 580 MPa              | 84100 psi            | Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1       |
|                            | 340 MPa              | 49300 psi            | EN min.; EN 10002-5  |
|                            | @Temperature 300 °C  | @Temperature 572 °F  |  |
|                            | 360 MPa              | 52200 psi            | EN min.; EN 10002-5  |
|                            | @Temperature 200 °C  | @Temperature 392 °F  |  |
|                            | 410 MPa              | 59500 psi            | EN min.; EN 10002-5  |
|                            | @Temperature 100 °C  | @Temperature 212 °F  |  |
| 830 MPa                    | 120000 psi           | EN min; EN 10002-5   |  |
| @Temperature -80.0 °C      | @Temperature -112 °F |                      |  |
| Tensile Strength, Yield    | 1200 MPa             | 174000 psi           | EN min; EN 10002-5   |
|                            | @Temperature -196 °C | @Temperature -321 °F |  |
|                            | 200 MPa              | 29000 psi            | EN min.,RT; EN 10002-1   |
|                            | @Strain 0.200 %      | @Strain 0.200 %      |  |
|                            | 240 MPa              | 34800 psi            | EN min.,RT; EN 10002-1   |
|                            | @Strain 1.00 %       | @Strain 1.00 %       |  |

| Mechanical Properties | 280 MPa<br>Metric                        | 40600 psi<br>English                    | Outokumpu Typical, Hot Rolled Plate<br>(Quarto); EN 10002-1         |
|-----------------------|--|---|---|
|                       | @Strain 0.200 %                          | @Strain 0.200 %                         |   |
|                       | <b>320 MPa</b>                           | <b>46400 psi</b>                        | <b>Outokumpu Typical, Hot Rolled Plate<br/>(Quarto); EN 10002-1</b> |
|                       | @Strain 1.00 %                           | @Strain 1.00 %                          |   |
|                       | <b>81.0 MPa</b>                          | <b>11700 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature 500 °C   | @Strain 0.200 %,<br>Temperature 932 °F  |   |
|                       | <b>89.0 MPa</b>                          | <b>12900 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature 400 °C   | @Strain 0.200 %,<br>Temperature 752 °F  |   |
|                       | <b>100 MPa</b>                           | <b>14500 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature 300 °C   | @Strain 0.200 %,<br>Temperature 572 °F  |   |
|                       | <b>109 MPa</b>                           | <b>15800 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 1.00 %,<br>Temperature 500 °C    | @Strain 1.00 %,<br>Temperature 932 °F   |   |
|                       | <b>116 MPa</b>                           | <b>16800 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 1.00 %,<br>Temperature 400 °C    | @Strain 1.00 %,<br>Temperature 752 °F   |   |
|                       | <b>118 MPa</b>                           | <b>17100 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature 200 °C   | @Strain 0.200 %,<br>Temperature 392 °F  |   |
|                       | <b>127 MPa</b>                           | <b>18400 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 1.00 %,<br>Temperature 300 °C    | @Strain 1.00 %,<br>Temperature 572 °F   |   |
|                       | <b>147 MPa</b>                           | <b>21300 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature 100 °C   | @Strain 0.200 %,<br>Temperature 212 °F  |   |
|                       | <b>147 MPa</b>                           | <b>21300 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 1.00 %,<br>Temperature 200 °C    | @Strain 1.00 %,<br>Temperature 392 °F   |   |
|                       | <b>181 MPa</b>                           | <b>26300 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 1.00 %,<br>Temperature 100 °C    | @Strain 1.00 %,<br>Temperature 212 °F   |   |
|                       | <b>220 MPa</b>                           | <b>31900 psi</b>                        | <b>EN min.; EN 10002-5</b>  |
|                       | @Strain 0.200 %,<br>Temperature -80.0 °C | @Strain 0.200 %,<br>Temperature -112 °F |   |

| Mechanical Properties        | 290 MPa<br>Metric                       | 42100 psi<br>English                    | Comments   |
|------------------------------|---|---|--|
|                              | @Strain 1.00 %,<br>Temperature -80.0 °C | @Strain 1.00 %,<br>Temperature -112 °F  | EN min.; EN 10002-5  |
|                              | <b>300 MPa</b>                          | <b>43500 psi</b>                        |  |
|                              | @Strain 0.200 %,<br>Temperature -196 °C | @Strain 0.200 %,<br>Temperature -321 °F | EN min.; EN 10002-5  |
|                              | <b>400 MPa</b>                          | <b>58000 psi</b>                        |  |
|                              | @Strain 1.00 %,<br>Temperature -196 °C  | @Strain 1.00 %,<br>Temperature -321 °F  | EN min.; EN 10002-5  |
| <b>Elongation at Break</b>   | <b>&gt;= 45.0 %</b>                     | <b>&gt;= 45.0 %</b>                     | <b>EN 10002-1</b>  |
|                              | <b>55 %</b>                             | <b>55 %</b>                             | <b>Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1</b>                  |
|                              | <b>30 %</b>                             | <b>30 %</b>                             |  |
|                              | @Temperature -196 °C                    | @Temperature -321 °F                    | EN min   |
|                              | <b>35 %</b>                             | <b>35 %</b>                             |  |
|                              | @Temperature -80.0 °C                   | @Temperature -112 °F                    | EN min   |
| <b>Modulus of Elasticity</b> | <b>200 GPa</b>                          | <b>29000 ksi</b>                        | <b>RT</b>  |
|                              | <b>165 GPa</b>                          | <b>23900 ksi</b>                        |  |
|                              | @Temperature 500 °C                     | @Temperature 932 °F                     |  |
|                              | <b>172 GPa</b>                          | <b>24900 ksi</b>                        |  |
|                              | @Temperature 400 °C                     | @Temperature 752 °F                     |  |
|                              | <b>179 GPa</b>                          | <b>26000 ksi</b>                        |  |
|                              | @Temperature 300 °C                     | @Temperature 572 °F                     |  |
|                              | <b>186 GPa</b>                          | <b>27000 ksi</b>                        |  |
|                              | @Temperature 200 °C                     | @Temperature 392 °F                     |  |
|                              | <b>194 GPa</b>                          | <b>28100 ksi</b>                        |  |
|                              | @Temperature 100 °C                     | @Temperature 212 °F                     |  |
| <b>Poissons Ratio</b>        | <b>0.30</b>                             | <b>0.30</b>                             | <b>RT</b>  |
| <b>Shear Modulus</b>         | <b>77.0 GPa</b>                         | <b>11200 ksi</b>                        | <b>calculated</b>  |
| <b>Impact Test</b>           | <b>&gt;= 60.0 J</b>                     | <b>&gt;= 44.3 ft-lb</b>                 | <b>Hot rolled plate/Cold rolled strip/sheet, 10x10mm test pieces; EN 10045-1</b> |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Thermal Properties<br><i>CTE, linear</i> | Metric                                    | English                                     | Comments |
|--|---|---|----------|
|  | @Temperature 100 °C                       | @Temperature 212 °F                         |          |
|  | 18.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ | 10.0 $\mu\text{in}/\text{in}\cdot\text{°F}$ |          |
|  | @Temperature 400 °C                       | @Temperature 752 °F                         |          |
| Specific Heat Capacity                   | 0.500 J/g-°C                              | 0.120 BTU/lb-°F                             | RT       |
| Thermal Conductivity                     | 15.0 W/m-K                                | 104 BTU-in/hr-ft <sup>2</sup> -°F           | RT       |
|  | 20.0 W/m-K                                | 139 BTU-in/hr-ft <sup>2</sup> -°F           |          |
|  | @Temperature 400 °C                       | @Temperature 752 °F                         |          |

| Component Elements Properties | Metric  | English | Comments |
|-------------------------------|---------|---------|----------|
| Carbon, C                     | 0.020 % | 0.020 % |          |
| Chromium, Cr                  | 18.1 %  | 18.1 %  |          |
| Iron, Fe                      | 73.58 % | 73.58 % |          |
| Nickel, Ni                    | 8.3 %   | 8.3 %   |          |

| Electrical Properties  | Metric           | English          | Comments |
|------------------------|------------------|------------------|----------|
| Electrical Resistivity | 0.0000730 ohm-cm | 0.0000730 ohm-cm | RT       |

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