

Industeel CLC 18.10 LN Nitrogen Containing 18Cr-10Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T S30000 Series Stainless Steel

Material Notes:

Description: CLC 18.10LN is a 18Cr-10Ni austenitic stainless steel with specific Nitrogen additions. Its low carbon content avoids intergranular corrosion, even on welded pieces without an ulterior water quenching. Alloys CLC 18.10LN exhibits an austenitic microstructure free of deleterious carbide precipitations at grain boundaries. The grade contains some residual ferrite (=2%) after solution annealing (1050 - 1150Â°C / 1922 - 2102 Â°F) and water quenching. Nitrogen alloying :improves tensile properties at room and moderate temperaturesimproves structure stability of austenite at very low temperature or under severe cold deformationsdoes not affect weldability or fabricabilityimproves localized corrosion resistant propertiesTypical applications are food processing industry, chemical industry.Tensile properties after water quenching.Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-CLC-1810-LN-Nitrogen-Containing-18Cr-10Ni-Austenitic-Stainless-Steel.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|---------------|----------|
| Density | 7.90 g/cc | 0.285 lb/inÂ³ | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|--|--|------------|
| Tensile Strength, Ultimate | 570 MPa | 82700 psi | |
| Tensile Strength, Yield | >= 270 MPa @Strain 0.200 % | >= 39200 psi @Strain 0.200 % | |
| | >= 310 MPa @Strain 1.00 % | >= 45000 psi @Strain 1.00 % | |
| Elongation at Break | 40 % | 40 % | |
| Creep Strength | 205 MPa @Temperature 600 Â°C, Time 3.60e+6 sec | 29700 psi @Temperature 1110 Â°F, Time 1000 hour | |
| Modulus of Elasticity | 200 GPa @Temperature 20.0 - 100 Â°C | 29000 ksi @Temperature 68.0 - 212 Â°F | |
| Poissons Ratio | 0.299 | 0.299 | Calculated |
| Shear Modulus | 77.0 GPa @Temperature 20.0 - 100 Â°C | 11200 ksi @Temperature 68.0 - 212 Â°F | |
| Charpy Impact | >= 180 J | >= 133 ft-lb | |

| Mechanical Properties | Metric | English | Comments |
|-----------------------|--------------------------|--------------------------|----------|
| | @Temperature -253 Â°C | @Temperature -423 Â°F | |

| Thermal Properties | Metric | English | Comments |
|------------------------|--------------------------------|--------------------------------|----------|
| CTE, linear | 16.0 Âµm/m-Â°C | 8.89 Âµin/in-Â°F | |
| | @Temperature 20.0 - 100 Â°C | @Temperature 68.0 - 212 Â°F | |
| | 16.5 Âµm/m-Â°C | 9.17 Âµin/in-Â°F | |
| | @Temperature 20.0 - 200 Â°C | @Temperature 68.0 - 392 Â°F | |
| | 17.0 Âµm/m-Â°C | 9.44 Âµin/in-Â°F | |
| | @Temperature 20.0 - 300 Â°C | @Temperature 68.0 - 572 Â°F | |
| | 18.0 Âµm/m-Â°C | 10.0 Âµin/in-Â°F | |
| | @Temperature 20.0 - 500 Â°C | @Temperature 68.0 - 932 Â°F | |
| Specific Heat Capacity | 0.500 J/g-Â°C | 0.120 BTU/lb-Â°F | |
| | @Temperature 20.0 - 100 Â°C | @Temperature 68.0 - 212 Â°F | |
| Thermal Conductivity | 15.0 W/m-K | 104 BTU-in/hr-ftÂ²-Â°F | |
| | @Temperature 20.0 - 100 Â°C | @Temperature 68.0 - 212 Â°F | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|---------|---------|--------------|
| Carbon, C | 0.020 % | 0.020 % | |
| Chromium, Cr | 18.4 % | 18.4 % | |
| Iron, Fe | 71.94 % | 71.94 % | As remainder |
| Nickel, Ni | 9.5 % | 9.5 % | |
| Nitrogen, N | 0.14 % | 0.14 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|--------------------------------|--------------------------------|----------|
| Electrical Resistivity | 0.0000730 ohm-cm | 0.0000730 ohm-cm | |
| | @Temperature 20.0 - 100 Â°C | @Temperature 68.0 - 212 Â°F | |

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