

G4R-N SUPER DUPLEX STAINLESS STEEL

G4R-N Super Duplex Stainless Steel has improved corrosion resistance compared to conventional Duplex Stainless Steels. G4R-N Alloy has superior corrosion and pitting resistance compared to conventional Stainless Steel Grades (430, 304, 316, 316L, 2304). These conventional grades of Stainless Steel have poor resistance to pitting, quantified by PREN (Pitting Resistance Equivalence Number)

$$\text{PREN} = (\text{Cr}\%) + 3.3(\text{Mo}\%) + 16(\text{N}\%)$$

Conventional S.S. PREN = 18 to 26

G4R-N PREN = 38 to 44

Duplex Stainless Steel Characteristics:

- Twice the Tensile & Yield Strength of Austenitic and Ferritic Stainless Steels
- Wide range of corrosion resistance to match applications
- Good Toughness from a 570°F (Max) down to -110°F but not intended for true cryogenic applications
- Particular resistance to Stress Corrosion Cracking due to high PREN
- Weldable (with care) in thick sections
- More difficult to form and Machine than Austenitics
- Increased Microhardness per phase by 20 to 50 Vickers

Recommended Applications:

Phosphoric Acid Processing, Mixed Acids and other Strong Oxidizer Slurries, Extreme pH (1.0 to 12.0), High Chlorides up to 100,000 ppm

Samples of each heat are analyzed prior to pouring to ensure exact chemical composition. Microstructural analyses are performed randomly and each casting is checked for proper hardness at several intervals during production.

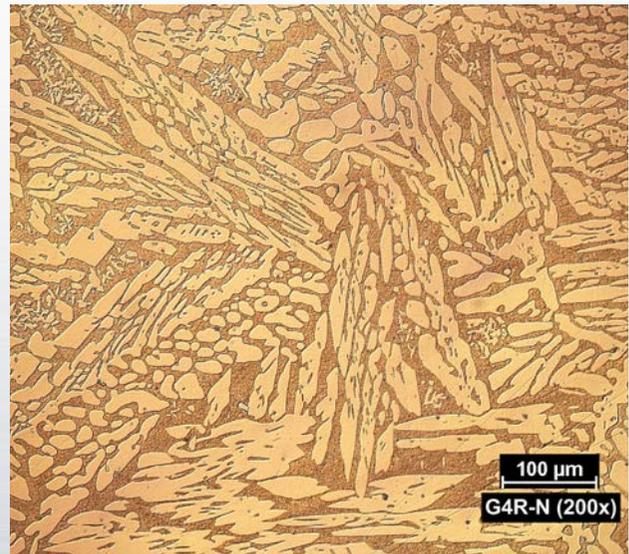
Mechanical Properties

Density	0.282 lbs/in ³
Brinell Hardness	250 - 285
Magnetic Permeability	Ferromagnetic

Chemical Analysis

Carbon	0.03 % MAX
Manganese	2.0% MAX
Silicon	1.0% MAX
Chromium	27.0% MAX
Nickel	7.0% MAX
Phosphorus	0.04% MAX
Sulfur	0.04% MAX
Molybdenum	4.0% MAX
Copper	3.0% MAX
Nitrogen	0.3% MAX

MICROSTRUCTURE



TOWNLEY

Engineering & Manufacturing Co., Inc.

Made in the USA



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