

## Carlson Nitronic® 30® Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

### Material Notes:

**General Description** Nitronic 30 is a nitrogen-strengthened austenitic stainless steel developed for applications requiring good aqueous corrosion resistance combined with good resistance to abrasive and metal-to-metal wear. Nitronic 30 has annealed mechanical properties which are well above those of typical austenitic grades such as 304. This higher strength affords the opportunity to reduce thickness at equivalent engineering loads. Galling resistance of Nitronic 30 is approximately equal to 304. It work hardens rapidly while retaining good ductility. Unlike other nitrogen-strengthened stainless steels, Nitronic 30 is subject to magnetic transformation when cold worked. Nitronic 30 exhibits outstanding corrosive wear resistance under many different sliding conditions. It is more cost effective than 409 and 304 which are typically used in wet abrasive applications. The alloy possesses good corrosion resistance in many different environments. Pitting resistance is better than 304. In sulfuric and hydrochloric acids, Nitronic 30 is superior to 409 and 410, and approaches 304 in dilute solutions. Nitronic 30 is markedly more resistant to stress corrosion cracking in hot chloride solutions at lower stress levels than 304 and 304L. At higher levels the chloride stress corrosion cracking resistance approximates 304 and 304L.

**Applications** Coal handling equipment – screens, chute liners, buckets and hopper cars  
Water supply and control structures  
Sewage treatment plant structures  
Mining equipment – magnetic ore separator screens  
Bulk solids handling equipment – conveyor parts  
Mixing tanks  
Wear plates now using less cost effective materials such as abrasion resistance steels, 409 or 304 stainless steels.  
Transport and vibratory equipment where fatigue resistance is a major design criteria.  
Shipboard containers  
Information provided by Carlson

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Carlson-Nitronic-30-Austenitic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_Carlson-Nitronic-30-Austenitic-Stainless-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.86 g/cc	0.284 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	<= 241	<= 241	
Hardness, Rockwell B	<= 100	<= 100	
Tensile Strength at Break	>= 655 MPa	>= 95000 psi	
Tensile Strength, Yield	>= 331 MPa @Strain 0.200 %	>= 48000 psi @Strain 0.200 %	
Elongation at Break	>= 35 %	>= 35 %	
Modulus of Elasticity	193 GPa	28000 ksi	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	15 - 17 %	15 - 17 %	

Component Elements Properties	Metric	English	Comments
Manganese, Mn	7.0 - 9.0 %	7.0 - 9.0 %	
Nickel, Ni	1.5 - 3.0 %	1.5 - 3.0 %	
Nitrogen, N	0.15 - 0.30 %	0.15 - 0.30 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	1.011	1.011	100 Oersteds
	1.014	1.014	500 Oersteds
	1.015	1.015	1000 Oersteds

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