

Industeel URANUS® 45N 22Cr 3Mo Duplex Stainless Steel with PREN = 33 or 34

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

Material Notes:

Description: URANUS® 45N (UR 45N) is a nitrogen alloyed (= 0.15%) austenitic-ferritic stainless steel (22.05 type) with improved structure stability and high general, localized and stress corrosion resistance properties. UR 45N with 22% Cr and 3% Mo additions, performs much better than 316L grade in almost all corrosive media,. The yield strength is about twice that of austenitic stainless steels. This allows the designer to save weight and makes the alloy more cost competitive when compared to 316 L grade. Typical operation temperatures are - 50°C/+ 280°C (-58°F/+536°F). Lower temperatures uses could to be considered require additional precautions, in particular for welded structures. UR 45N is a multi-purposes material which can be used in various corrosive media. Typical applications are Pulp and Paper industry, Oil and Gas industry, Pollution control equipments, Chemical industry and Chemical tankers. Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-URANUS-45N-22Cr-3Mo-Duplex-Stainless-Steel-with-PREN-33-or-34.php

Physical Properties	Metric	English	Comments
Density	7.80 g/cc	0.282 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	210 - 240	210 - 240	Typical
Hardness, Rockwell C	15 - 20	15 - 20	Typical
Tensile Strength, Ultimate	>= 680 MPa	>= 98600 psi	
Tensile Strength, Yield	>= 460 MPa @Strain 0.200 %	>= 66700 psi @Strain 0.200 %	
	>= 490 MPa @Strain 1.00 %	>= 71100 psi @Strain 1.00 %	
Elongation at Break	>= 25 %	>= 25 %	
Modulus of Elasticity	200 GPa	29000 ksi	
Poissons Ratio	0.333	0.333	Calculated
Shear Modulus	75.0 GPa @Temperature 20.0 °C	10900 ksi @Temperature 68.0 °F	
Charpy Impact	>= 120 J	>= 88.5 ft-lb	
	150 J	111 ft-lb	Typical
	>= 75.0 J	>= 55.3 ft-lb	

Mechanical Properties	Metric	English	Comments
	90.0 J	66.4 ft-lb	Typical
	@Temperature -50.0 °C	@Temperature -58.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.5 µm/m-°C	7.50 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	14.0 µm/m-°C	7.78 µin/in-°F	
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	14.5 µm/m-°C	8.06 µin/in-°F	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
Specific Heat Capacity	0.450 J/g-°C	0.108 BTU/lb-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	17.0 W/m-K	118 BTU-in/hr-ft²-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.020 %	0.020 %	As remainder
Chromium, Cr	22 %	22 %	
Iron, Fe	69.518 - 69.52 %	69.518 - 69.52 %	
Molybdenum, Mo	3.0 %	3.0 %	
Nickel, Ni	5.3 %	5.3 %	
Nitrogen, N	0.16 %	0.16 %	
Sulfur, S	<= 0.0020 %	<= 0.0020 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000800 ohm-cm	0.0000800 ohm-cm	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

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