

Carlson 20 Plus Alloy

Category : Metal , Nonferrous Metal , Nickel Alloy

Material Notes:

Carlson C20 Plus is a super-austenitic alloy, developed to provide maximum resistance to corrosion by sulfuric acid. Nickel chromium, molybdenum and copper contribute to the excellent overall resistance of C 20 Plus to chloride stress corrosion cracking and general pitting. Because this alloy is stabilized with columbium, it can be used in the as-welded condition, thus expediting on-site fabrication. Applications Although C 20 Plus was developed primarily for sulfuric acid applications, it is also widely used in other chemical processing environments. C 20 Plus is employed in flue-gas scrubbers, sulfuric acid pickling, and in various other industries such as petroleum refining, pulp and paper, food and dyes. Chemical Processing – sulfuric acid, phosphoric acid, pesticides, formic and nitric acids, butadiene (synthetic rubber), caustics, solvents, explosives. Petroleum Refining. Flue Gas Scrubbing Systems Pulp and Paper Food and Dye Processing Sulfuric Acid Pickling Equipment. Information provided by Carlson

Order this product through the following link:

http://www.lookpolymers.com/polymer_Carlson-20-Plus-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.06 g/cc	0.291 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	<= 217	<= 217	
Hardness, Rockwell B	<= 95	<= 95	
Tensile Strength at Break	>= 552 MPa	>= 80000 psi	
Tensile Strength, Yield	>= 241 MPa @Strain 0.200 %	>= 35000 psi @Strain 0.200 %	
Elongation at Break	>= 30 %	>= 30 %	
Modulus of Elasticity	193 GPa	28000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	14.7 µm/m-°C @Temperature 25.0 - 100 °C	8.16 µin/in-°F @Temperature 77.0 - 212 °F	
	15.9 µm/m-°C @Temperature 25.0 - 450 °C	8.84 µin/in-°F @Temperature 77.0 - 842 °F	
	17.2 µm/m-°C @Temperature 25.0 - 900.0 °C	9.53 µin/in-°F @Temperature 77.0 - 1652 °F	

Thermal Properties	Metric 0.502 J/g-°C	English 0.120 BTU/lb-°F	Comments
Specific Heat Capacity	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.070 %	<= 0.070 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Copper, Cu	3.0 - 4.0 %	3.0 - 4.0 %	
Iron, Fe	29.85 - 44 %	29.85 - 44 %	
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	2.0 - 3.0 %	2.0 - 3.0 %	
Nb + Ta	<= 1.0 %	<= 1.0 %	
Nickel, Ni	32 - 38 %	32 - 38 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.035 %	<= 0.035 %	

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