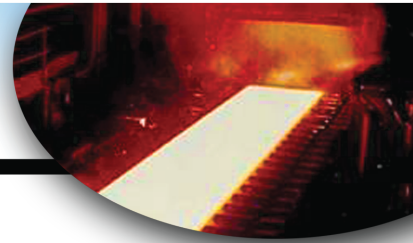




G.O. Carlson Plate



CARLSON ALLOY 330 (UNS N08330) PRODUCT DATA BULLETIN

High temperature strength. Excellent resistance to carburization and oxidation at temperatures to 2200°F. Highly resistant to chloride stress corrosion cracking. Fully austenitic at all temperatures. Totally immune to sigma phase formation.

GENERAL PROPERTIES AND TYPICAL APPLICATIONS

Carlson Alloy 330 is a nickel-iron-chromium-silicon austenitic alloy. It combines high strength with excellent resistance to carburization and oxidation at temperatures to 2200°F (1200°C).

330 remains completely austenitic at all temperatures; and is totally immune to sigma phase formation.

With a 34 to 37 percent nickel content, 330 is highly resistant to chloride stress corrosion cracking. This high temperature alloy is often utilized for applications where conventional austenitic stainless steels are marginal.

APPLICATIONS:

330 is used extensively in elevated temperature environments where resistance to the combined effects of thermal cycling and carburization is required.

Furnace Containers – annealing, carbonitriding, malleablizing.

Heat Treating Equipment – muffles, retorts, conveyor systems, baskets, boxes, quenching fixtures.

Gas Turbine Components.

Heat Exchangers.

Furnace Fans.

Petrochemical Furnace Parts.

Salt Pots – neutral, cyanide.

Hot Pressing Platens.

CHEMICAL COMPOSITION (NOMINAL ANALYSIS, PERCENT)

Carbon, max.0.08
 Manganese, max.2.00
 Silicon0.75 min. – 1.50 max.
 Phosphorus, max. 0.030
 Sulfur, max. 0.030
 Chromium17.00min. – 20.00 max.

Nickel34.00 min. – 37.00 max.
 Copper, max.0.75
 Lead, max.0.005
 Tin, max.0.025
 Iron*Remainder

* Element shall be determined arithmetically by difference.

AVAILABLE PRODUCTS*

Plate	3/16" through 4" Widths to 108", lengths to 480" <i>For larger dimensions – inquire.</i>
Plate Products	cut bar, plasma cut or machined rings and discs, heads, rolled and tack-welded cylinders, and special cut shapes

* Bar, billet, ingot and master alloy pigs are available from: ELECTRALLOY, a G.O. Carlson Inc. company, 175 Main Street, Oil City, PA 16301 (800) 458-7273

MECHANICAL AND PHYSICAL PROPERTIES

Tensile Strength, min.	70,000 psi (483 MPa)
Yield Strength (0.2% offset), min.	30,000 psi (207 MPa)
Elongation in 2 in. (50.8 mm), or 4D, %, min.	30
Hardness	95 HRB (max.)
Density, grams per cu. cm.	7.97
lb. per cu. in.	0.289
Magnetic Permeability (B-H at 200H)	1.02
Melting Range, °F	2450-2540
Specific Heat, BTU per lb. per °F	0.11
Modulus of Elasticity, tension, psi x 10⁶	28.5

SPECIFICATIONS

ASME SB536 ASTM B536 AMS 5592

Information in this product data bulletin is not intended for specification purposes. All data should be considered as typical or average, except when listed as minimum or maximum values.

The applications cited will allow a potential user to consider this Carlson alloy for a particular installation. But none of the information is to be construed as a warranty of fitness for any application.

As with all special-service materials, this alloy must be tested under actual service conditions to determine its suitability for a specific project.



Unsurpassed experience with specialty metals

350 Marshallton-Thorndale Road • Downingtown, PA 19335-2063
Telephone (610) 384-2800 • Fax (610) 383-3429