G. O. Carlson Plate Products

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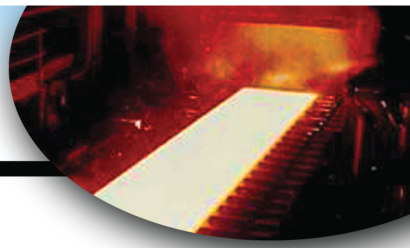

CARLSON ALLOY C20 PLUS (UNS N08020) PRODUCT DATA BULLETIN

Maximum resistance to corrosion by sulfuric acid. Excellent resistance to chloride stress corrosion cracking and general pitting. This nickel-chromium-molybdenum-and-copper alloy can be used in the as-welded condition for a wide range of demanding applications.

GENERAL PROPERTIES AND TYPICAL APPLICATIONS

Carlson Alloy 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 C20 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 C20 Plus was developed primarily for sulfuric acid applications, it is also widely used in other chemical processing environments.

C20 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.

CHEMICAL COMPOSITION (NOMINAL ANALYSIS, PERCENT)

Carbon, max.	0.07
Manganese, max.	2.00
Silicon, max.	1.00
Sulfur, max.	0.035
Phosphorus, max.	0.045
Chromium	19.00 min. – 21.00 max.
Nickel	32.00 min. – 38.00 max.
Molybdenum	2.00 min. – 3.00 max.
Copper	3.00 min. – 4.00 max.
Columbium plus Tantalum	8x carbon, min. – 1.00 max.
Iron*	Remainder

*Element shall be determined arithmetically by difference.

AVAILABLE PRODUCTS*

Plate	3/16" through 4" Widths to 108", lengths to 480" *For larger dimensions – inquire.*
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.	80 ksi (551 MPa)
Yield Strength (0.2% offset), min.	35 ksi (241 MPa)
Elongation in 2 in. (50.8 mm), or 4D, %, min.	30
Hardness, Brinell, max.	217
Rockwell B, max.	95
Density, grams per cu. cm.	8.06
lb. per cu. in.	0.292
Specific Heat, (32˚ - 212˚F), BTU per lb. per ˚F	0.12

SPECIFICATIONS

ASME SB463
ASTM B463

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.

G. O. Carlson
Plate Products

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