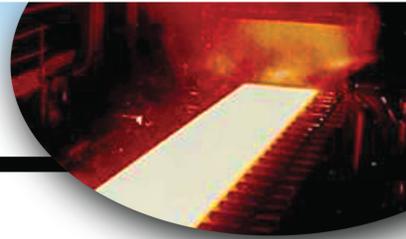




G.O. Carlson Plate



CARLSON ALLOY EC825 (UNS N08825) PRODUCT DATA BULLETIN

Resists pitting, corrosion and intergranular attack in severely corrosive environments.
 Excellent resistance to corrosion by salt water. Widely used in many industries.
 Resists attack by acids and oxidizing salts.

GENERAL PROPERTIES AND TYPICAL APPLICATIONS

Carlson Alloy EC825 is a nickel-iron-chromium alloy, developed for use in extremely corrosive environments. The nickel content of this alloy makes it resistant to chloride-ion stress corrosion cracking; and in combination with its molybdenum and copper content, endows EC825 with resistance to pitting and corrosion in reducing acids. The presence of chromium provides resistance to oxidizing environments. When heated in the critical sensitization temperature range of 1200° to 1400°F (650° to 760°C), EC825 resists pitting and intergranular attack.

APPLICATIONS:

EC825 is utilized in numerous corrosive environments, including the processing and storage of reducing acids such as sulfuric and phosphoric solutions. It is also used in various oxidizing environments, including nitric acid solutions, nitrates and oxidizing salts.

EC825 offers excellent resistance to corrosion by seawater.

Chemical Processing – heat exchangers, evaporators, pumps, piping, valves, vessels, expansion bellows, tank trucks, scrubbers, condensers, tank and vessel linings; and for processing and handling sulfuric acid, phosphoric acid, hydrofluoric acid, nitric acid, nitrates and oxidizing salts.

Pulp and Paper – wet scrubber linings in systems using sodium sulfite and sodium bisulfite solutions.

Pickling Processes – tank heaters and hooks.

Ore Processing – hydrometallurgy and plate heat exchangers in copper refining.

Pollution Control – Hopper bottoms and trays in electrostatic precipitators, ducts and dampers, stack-gas reheaters, waste-heat recovery exchangers, stack liners and other wet scrubber components, sludge-incinerator web scrubbers, marine inert-gas scrubbers, radwaste evaporator systems.

CHEMICAL COMPOSITION (NOMINAL ANALYSIS, PERCENT)

Carbon, max.	0.05	Nickel (plus Cobalt)	38.0 min. – 46.0 max.
Manganese, max.	1.0	Molybdenum	2.5 min. – 3.5 max.
Silicon, max.	0.5	Titanium	0.6 min. – 1.2 max.
Sulfur, max.	0.03	Copper	1.5 min. – 3.0 max.
Aluminum, max.	0.2	Iron, min. *	22.00
Chromium	19.5 min. – 23.5 max.		

*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, psi, min.	85,000
Yield Strength (0.2% offset), psi, min.	35,000
Elongation in 2 in., %, min.	30
Density, grams per cu. cm.	8.14
lb. per cu. in.	0.294
Magnetic Permeability (70°F, 200 Oersted)	1.005
Melting Range, °F	2500-2550
Curie Temperature, °F	<-320

SPECIFICATIONS

**ASME SB424
ASTM B424**

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.



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350 Marshallton-Thorndale Road • Downingtown, PA 19335-2063 • Toll Free (800) 338-5622 (All USA & Canada)
Telephone (610) 384-2800 • Fax (610) 383-3429