

# HASTELLOY® C-22® GENERAL PROPERTIES

Hastelloy® C-22® (UNS N06022) is the most versatile nickel-chromium-molybdenum-tungsten alloy available today. With improved resistance to both uniform and localized corrosion, it will outperform other nickel alloys such as C-276, C-4, Alloy 20, and Alloy 625 in applications using a variety of mixed industrial chemicals.

The composition of Hastelloy C-22 has many benefits that help enhance resistance to pitting, crevice corrosion, and stress corrosion cracking. It has excellent resistance to oxidizing aqueous media, including wet chlorine, mixtures containing nitric acid, and oxidizing acids with chlorine ions.

C-22 is a great alternative when superaustenitic stainless steels (AL-6XN, 904L, and 254 SMO®) and duplex stainless steels (2205 and 2507) cannot withstand highly aggressive media.

## CHEMICAL REQUIREMENTS OF HASTELLOY® C-22® (UNS N06022); WT. %

ELEMENT	UNS N06022
Carbon	0.015*
Manganese	0.50*
Phosphorous	0.02*
Cobalt	2.5*
Tungsten	2.5–3.5*
Silicon	0.08*
Sulfur	0.02*
Chromium	20.0–22.5
Nickel	Balance (56)
Molybdenum	12.5–14.5
Vanadium	0.35*
Iron	2.0–6.0

\*Maximum unless otherwise specified  
Disclaimer: Always consult current standards.

## PRODUCT FORMS AND MATERIAL STANDARDS

Corrosion resistant alloys are available in the most common product forms: plate, sheet, strip, bar, billet, wire, pipe, and tubing. The table to the right shows applicable ASME and ASTM material standards associated with the various alloy products forms.

### COMMON SPECIFICATIONS FOR CORROSION RESISTANT ALLOYS

ALLOY FORM	C-22 ASME	C-22 ASTM
Plate, Sheet, and Strip	SB575	B575
Rod, Bar, and Wire	SB574	B574
Welded Pipe	SB619	B619
Heat Exchanger Tubing	-	-
Sanitary Tubing	-	-
Welded Tubing (General Applications)	SB626	B626
Seamless Pipe and Tubing	SB622	B622
Forged Pipe Flanges, Fittings, and Valves	SB462	B462
Wrought Nickel Alloy Welded Fittings	SB366	B366
Nickel Alloy Forgings	SB564	B564
Castings	SA494 CX2MW UNS N26022	A494
Bare Welded Rods and Wire	ERNiCrMo-10 UNS N06022	-

C22 Properties/Specs REV 6/20