

ALLOY DATA SHEET CN-7M

CORROSION RESISTANT ALLOY

REVISION: 10/02

DESCRIPTION

CK-20 is a highly alloyed Fe-Cr-Ni-Mo-Cu alloy. The high nickel content in combination with the added elements Molybdenum and Copper give this alloy especially good resistance to sulfuric acid and many reducing chemicals. In addition, alloy CN-7M has good resistance to dilute acid and hot chloride salt solutions, as well as nitric acid. It is also resistant to corrosion by Sodium Hydroxide.

The alloy is fully austenitic and requires a high temperature solution anneal to improve ductility and strength and maximize corrosion resistance. The alloy should be solution annealed to maximize corrosion resistance and after welding to prevent sensitization of the HAZ.

COMPOSITION

	C	Mn	Si	Cr	Ni	Mo	Cu	P	S
Min %				19	27.5	2.0	3.0		
Max %	0.07	1.50	1.50	22	30.5	3.0	4.0	0.04	0.04

APPLICATIONS

Pickling rolls, hooks, racks, pulp and paper chemical processing.

PRODUCT FORMS

Horizontal and vertical centrifugal castings; static castings.

PHYSICAL PROPERTIES

Density (lbs/in ³)	0.289		
Liquidus(°F)	2650		
Thermal Conductivity (Btu/h/ft ² /ft/°F)	12.1 @ 212°F		
Thermal Expansion (10 ⁻⁶ in/in °F)	70-212°F	8.6	
	70-1000°F	9.7	
Magnetic Permeability	1.01-1.10 (Soln Ann)		

MECHANICAL PROPERTIES

(Typical Values at Room Temperature - Solution Annealed above 2050°F, Water Quenched.)

			<u>ASTM Spec A296</u>
U.T.S.	K.S.I.	69	62.5 Min
Y.S.	K.S.I.	31.5	25 Min
Elong.	%	48	35 Min
Hardness	BHN	130	
Charpy "V"	ft-lbs	70	

WELDABILITY

CN-7M may be welded by the SMAW, GTAW and GMAW processes.

Electrodes E320-15

Preheat Not required

Post weld heat treatment 2050°F W.Q.

Procedures for welding CN-7M alloy are available from Kubota Metal Corporation

RELATED SPECIFICATIONS

Nearest wrought grade: 20Cb-3

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