

ALLOY DATA SHEET

CK-20

CORROSION RESISTANT ALLOY

REVISION: 10/02

DESCRIPTION

CK-20 is an Fe-Cr-Ni alloy containing slightly more chromium and considerably more nickel than the CH-20 grade. The alloy is used provides good resistance to dilute sulfuric acid and resists many corrosives more effectively than CF-8 type.

The alloy is fully austenitic and contains chromium carbides throughout the matrix, which are put into solution by high temperature solution anneal, which also improves ductility and strength. The alloy should be solution annealed to maximise corrosion resistance and after welding to prevent sensitization of the HAZ.

COMPOSITION

	C	Mn	Si	Cr	Ni	P	S
Min %				23	19		
Max %	0.20	1.50	2.0	27	22	0.04	0.04

APPLICATIONS

Pump casings, valve bodies, digesters, roaster hardware..

PRODUCT FORMS

Horizontal and vertical centrifugal castings; static castings.

PHYSICAL PROPERTIES

Density (lbs/in ³)	0.28		
Liquidus(°F)	2600		
Thermal Conductivity (Btu/h/ft ² /ft/°F)	7.9	@ 212°F	
	9.8	@ 600°F	
	11.8	@ 1000°F	
Thermal Expansion (10 ⁻⁶ in/in °F)	70-212°F	8.3	
	70-600°F	8.9	
	70-1000°F	9.4	
Magnetic Permeability	1.02 (Soln Ann)		

MECHANICAL PROPERTIES

(Typical Values at Room Temperature - Solution Annealed above 2000°F, Water Quenched.)

			<u>ASTM Spec A296</u>
U.T.S.	K.S.I.	76	65 Min
Y.S.	K.S.I.	38	28 Min
Elong.	%	37	30 Min
Hardness	BHN	144	
Charpy "V"	ft-lbs	45	

WELDABILITY

CK-20 may be welded by the SMAW, GTAW and GMAW processes.

Electrodes 310

Preheat Not required

Post weld heat treatment 2000°F W.Q.

Procedures for welding CK-20 alloy are available from Kubota Metal Corporation

RELATED SPECIFICATIONS

Nearest wrought grade: AISI 310

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