

## ALLOY DATA SHEET CA-15

## CORROSION RESISTANT ALLOY

REVISION: 01/90

### DESCRIPTION

CA-15 is essentially the original cutlery steel, an iron base alloy with just enough chromium to prevent atmospheric rusting and be resistant to corrosion in many organic solutions.

### COMPOSITION

	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>Cr</u>	<u>Ni</u>	<u>Mo</u>	<u>P</u>	<u>S</u>
Min %				11.5				
Max %	0.15	1.0	1.5	14.0	1.0	0.5	0.04	0.04

### APPLICATIONS

Pump casings, bowls, impellers and diffusers, valve bodies and trim, water turbine components, ships propellers, skimmer ladles, architectural hardware

### PRODUCT FORMS

Horizontal and vertical centrifugal castings; static castings.

### PHYSICAL PROPERTIES

Density (lbs/in <sup>3</sup> )	0.275
Liquidus(°F)	2750
Thermal Conductivity (Btu/h/ft <sup>2</sup> /ft/°F)	14.5 @ 212°F 16.7 @ 1000°F
Thermal Expansion (10 <sup>-6</sup> in/in °F)	5.5 @ 70-212°F 6.4 @ 70-1000°F 6.7 @ 70-1300°F
Magnetic Permeability	500 @ H = 100 Oersted

### MECHANICAL PROPERTIES (Typical Values-1800°F Air Cool)

		<u>TEMPERING TEMPERATURE*</u>				°F	<u>ASTM Spec.A743</u>	
		<u>600</u>	<u>1100</u>	<u>1200</u>	<u>1450</u>			
U.T.S.	K.S.I.	200	135	115	100		90	Min
Y.S.	K.S.I.	150	115	100	75		65	Min
Elong.	%	7	17	22	30		18	Min
R.A.	%	25	55	55	60		30	Min
Brinell	H B	390	260	225	185			
Charpy "V"	ft-lbs	15	10	20	35			

- \*Notes
- Tempering at about 900°F should be avoided due to poor impact strength.
  - Tempering at 600°F or less, optimizes strength, hardness and corrosion resistance.
  - Tempering above 1100°F increases ductility and impact strength but reduces corrosion resistance.

**WELDABILITY**

CA-15 may be welded by the SMAW, GTAW or GMAW processes.

Electrodes                      Type 410

Preheat                              400 to 600°F

Post weld heat treatment      1125 to 1400°F, Air Cool.

Procedures for welding CA-15 alloy are available from Kubota Metal Corporation.

**RELATED SPECIFICATIONS**

ASTM: A217(CA15), A 487(CA15M); A743(CA-15), UNS J91150

Nearest wrought grade: AISI 410

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