



HighChrome 36%Cr

Issued: May 2006

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ICS Internal Code – 36

MATERIAL TYPE:

Low Carbon, High Chromium White Iron

COLOUR:

Grey

RELATED STANDARDS:

None

NOMINAL COMPOSITION:

Confidential

GENERAL DESCRIPTION:

Alloy 36 is a corrosion resistant white iron suitable for low pH corrosion duties, where erosive wear is also a problem. The alloy is particularly suitable for Flue Gas Desulphurization applications, where the pH is greater than 4.

PARTS:

Impellers, Throatbushes, Volute Liners, Frame plate liner inserts, Expellers, Expeller Rings, Stuffing Boxes.

CHEMICAL RESISTANCE:

Alloy 36 is suitable for use in slurries containing sulphuric and nitric acids, or sodium hydroxide, within a pH range of 3 to 14. Is suitable for sulphuric acid slurries containing chlorides, and minor levels of fluorides. See Figures 3 thru 6.

TYPICAL MICROSTRUCTURE:

The microstructure of Alloy 36 consists of primary austenite dendrites surrounded by eutectic consisting of iron/chromium carbides and austenite.

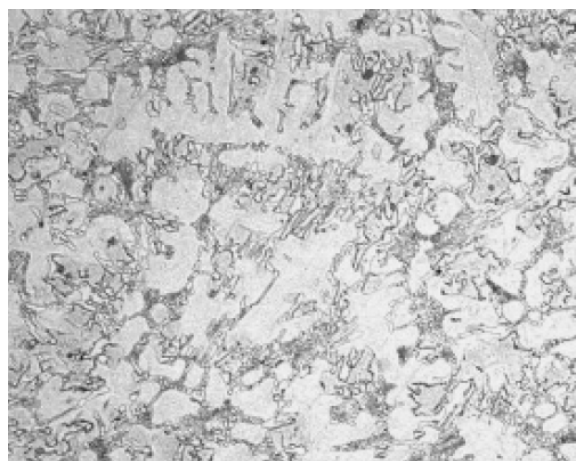


Figure 1 – Typical Microstructure for ICS-36

MATERIAL DATA SHEET

SERVICE RECOMMENDATIONS:

Was developed for the FGD Market and offers good erosion/corrosion resistance.

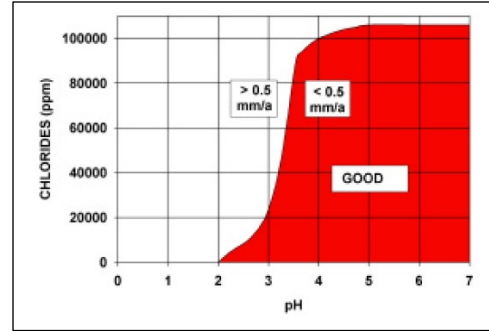


Figure 2: Chlorides in Sulphuric Acid at 70 degrees C.

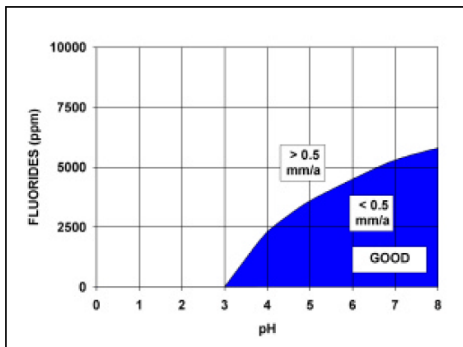


Figure 4: Fluorides in Sulphuric Acid at 25 degrees C.

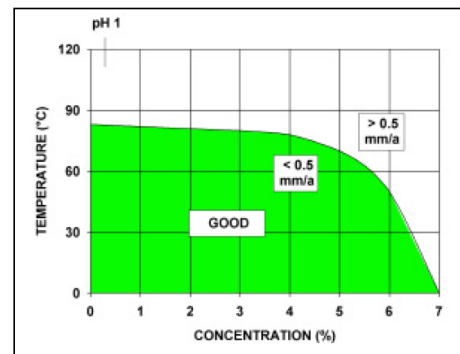


Figure 3: Resistance of ICS-30 Nitric Acid

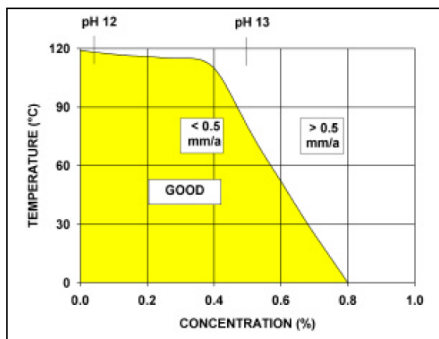


Figure 5: Resistance to Sodium Hydroxide

The corrosion diagrams were plotted using data obtained in laboratory tests in reagent grade acids and sodium chloride, this data should be used only as a guide. It is recommended that samples be tested under actual plant conditions.

MATERIAL DATA SHEET

PHYSICAL PROPERTIES	
DENSITY (kg/m ³)	7580
HARDNESS (HB)	320 min
TENSILE STRENGTH (MPa)	380 min
TOUGHNESS (MPa √m)	35 min

EROSION AND CORROSION RESISTANCE:

Material Resistance	Erosion	Corrosion
Very High	A	1
High	B	2
Medium	C	3
Fair	D	4
Low	E	5

36 is D2

MATERIALS HANDLING INFORMATION:

DO NOT WELD 36 PARTS

NEW PARTS HANDLING

No special handling requirements are needed. Wash hands after contact.

USED PARTS HANDLING

Personnel should take precaution when handling metal parts after they have been in service, due to possible contamination from slurry chemicals. Personal protective equipment should be worn such as gloves and protective clothing.

This data is provided as a guide only and should not be used as a specification. All test data, physical and chemical properties are accurate at the date of issue, however as Materials Development is an ongoing process, International Castings & Supplies reserve the right to revise data and properties at any time.

Internal Use: Yes

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External Use: Yes