



Description

Type HN is an iron-chromium-nickel alloy containing sufficient chromium for good high temperature corrosion resistance with a nickel content in excess of the chromium content. The alloy has properties somewhat similar to the much more widely used Type HT alloy but with better ductility.

Typical Applications

- Cast Parts
- Corrosive Environments
- Aircraft Industry
- Automotive industry
- Petroleum industry
- Petrochemical industry
- Power Industry

Corrosion Resistance

Good High temperature corrosion resistance. The alloy has an austenitic structure at all temperatures, and lies well within the stable austenite field. The as-cast condition carbide areas are present and additional fine carbides precipitate on aging.

Heat Resistance

Type HN is used for highly stressed components in the 1800-2000°F temperature range. In several specialized applications, notably brazing fixtures, it has given satisfactory service at temperatures of 2000-2100°F.

Heat Treatment

Castings of Type HN alloy are normally supplied in the as-cast condition.

Welding

Castings can be welded by metal-arc, inert-gas arc, and oxyacetylene gas methods. Metal-arc welding is generally preferred for high temperature applications of this alloy. neither preweld or postweld heat treating is required.

Chemical Analysis Max values		C	Mn	P	S	Si	Cr	Ni
	HN	0.20-0.50	2.0	0.04	0.04	2.00	19.0-23.0	23.0-27.0

Typical Mechanical Properties- As-Cast	Yield Strength	Tensile Strength	Elongation	Hardness		Impact Charpy	Modulus of Elasticity in Tension - ksi
	ksi	ksi	% in 2"	R b	BHN		
	38	68	13	-	160	0.283	

Other Properties	Creep Strength 1% flow 10,000 hours at 1600°F -ksi	Electrical Resistivity - μΩ.m At 70°F	Coefficient of Thermal expansion: μ in./ (in.°F) 32°- 212°F	Thermal Conductivity BTU/ft. ² /Hr.°F/ft.	
				At 212°F	At 932°F
	4.80	0.991	9.3	7.5	11.0