

# Title: Gaining The Equivalent Quality With Smaller Investment

# NAS 155N UNS S31727

## Brief Introduction:

**NAS155N (UNS S31727)** is austenitic stainless steel with high corrosion, it has a special design for vitriol pitting resistance in petrochemical industry

**NAS155N** can be used in the heat exchanger of heavy oil boiler and exhaust pipe.

**NAS155N** can be used in antipollution device and vitriol treatment device.

## Characteristics:

Compared with UNS N08904, **NAS155N** has the following special advantages:

- Almost the equivalent vitriol corrosion resistance
- Much reasonable price.

**NAS155N : 18Cr - 15Ni - 4.0Mo - 3.0Cu - 0.17N**

**N08904 : 20Cr - 24Ni - 4.3Mo - 1.5Cu - low N**

**NAS155N** has high contents of Cu and N but low Ni. (All these elements have good corrosion resistance.)

## Chemical Composition

Table 1: Chemical Composition

	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N
NAS155N	0.030	1.00	1.00	0.030	0.03	14.5 ~16.5	17.5 ~19.0	3.8 ~4.5	2.8 ~4.0	0.15 ~0.21
904L	0.020	1.00	2.00	-	-	23~ 28	19~ 23	4.0~ 5.0	1.0~ 2.0	-

## Physical Properties

Table 2: Physical Properties

Density	g/cm <sup>3</sup>	7.98
Specific Heat	J/(kg · K) 25°C	460
Electric Resistance	μ Ω · cm	86
Thermal Conductivity Ratio	W/(m · k) 25°C	21.8
Thermal Expansion Coefficient	10 <sup>-6</sup> /°C 30~200°C	16.4
	30~300°C	17.0
	30~400°C	17.4
Vertical Elasticity Coefficient	N/mm <sup>2</sup>	20.3 × 10 <sup>4</sup>
Magnetism		non
Melting Point	°C	1420

## Mechanical Properties

**Table 3: Mechanical Properties**

Example		Yield Ratio (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation (%)	Hardness (HB)
Shape.Size.Surface	Specification	≥245	≥550	≥35	≤220
Coil	2 <sup>t</sup> 2B	322	690	41	167
Cold Rolled Sheet	4 <sup>t</sup> 2D	315	681	45	162
Hot Rolled Sheet	10 <sup>t</sup> No.1	341	662	49	178
Pipe	2 <sup>t</sup> × 27 φ	—	718	70	—

