

NAS631 (17-7PH, UNS S17700)

High Strength Stainless Steel

SUS631 (17-7PH) is a precipitation hardening stainless steel that offers excellent mechanical properties and spring performance. Its most notable feature is the ability to achieve high strength and hardness through heat treatment. At NAS KOTAI, we can supply this material in various finishes such as 2D, 2B, BA, or temper grades including 1/2H, 3/4H, and H, depending on processing requirements and applications.

Steel Grade/Standard

Nippon Yakin Grade	JIS G4305,G4313	ASTM A693	EN
NAS631	SUS631	UNS 17700	1.4568

Chemical Composition

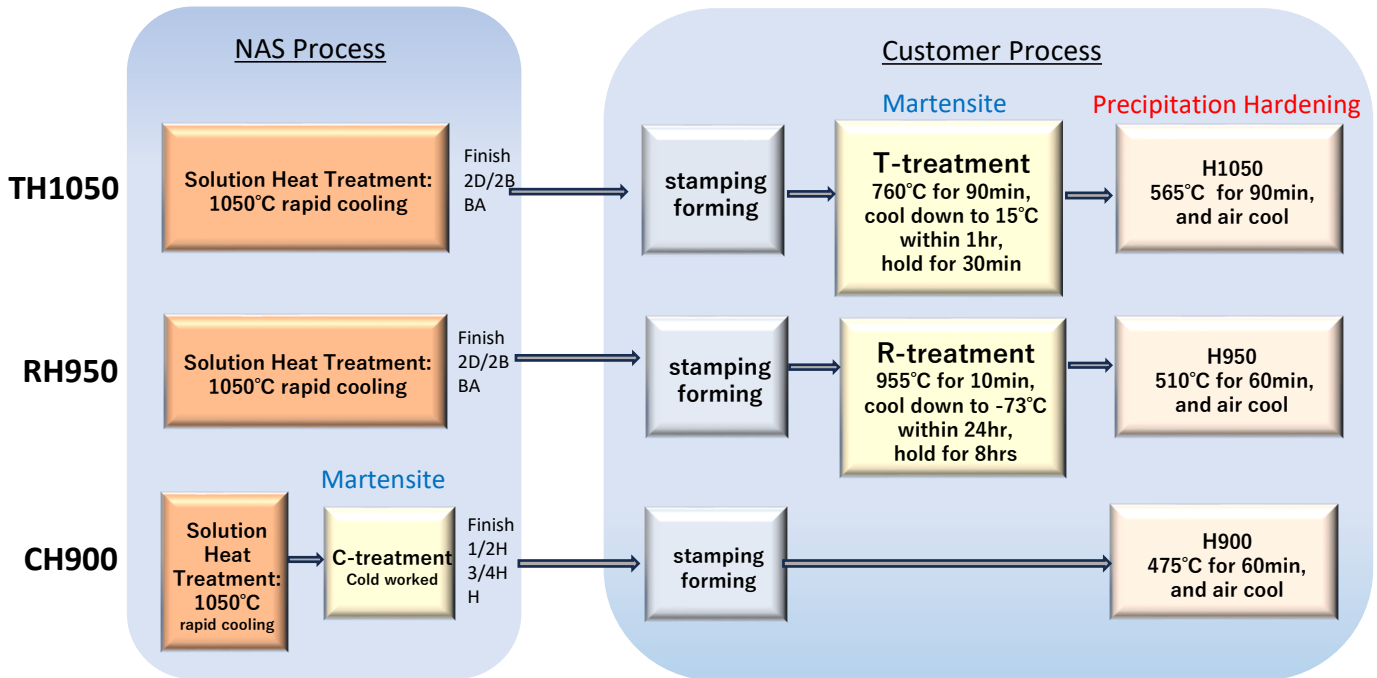
[wt %]

	C	Si	Mn	P	S	Ni	Cr	Al
Specification (SUS631)	≤0.09	≤1.00	≤1.00	≤0.04 0	≤0.030	6.50~ 7.75	16.00~ 18.00	0.75~ 1.50
Typical	0.081	0.30	0.92	0.025	0.0006	7.24	16.31	1.06

Mechanical Properties

Finish	As cold rolled or as solution-treated			As precipitation-hardened (customer)			
	Hardness (HV)	Tensile strength (N/mm2)	Elongation (%)	Symbol of treatment	Hardness (HV)	Yield strength (N/mm2)	Tensile strength (N/mm2)
2B/2D BA	200max	1030max	20min	TH1050 RH950	345min 392min	960min 1030min	1140min 1230min
1/2H	350min	1080min	5min	CH	380min	880min	1230min
3/4H	400min	1180min	-	CH	450min	1080min	1420min
H	450min	1420min	-	CH	530min	1320min	1720min

Heat treatment process



First, the material is changed into a martensitic structure by one of the following methods:

T-treatment, R-treatment, C-treatment(Cold worked)

Then, the material is hardened by **precipitation hardening (H-treatment)** to make it stronger.

Production capability

Finish : 2D/ 2B / BA, 1/2H/3/4H/H

Thickness : 0.05mm ~ 1.2mm

Width : 2mm ~ 500mm

Application

Spring washer, High-Strength precision parts

For more information, please contact:
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