

NAS PB

NAS Soft Magnetic Material

NAS PB is a soft magnetic Fe-Ni alloy with about 48%Ni. It is a high magnetic permeability alloy with comparatively high saturation magnetic flux density. Nippon Yakin supplies NAS PB in sheet and strip forms.

Chemical Composition

											[wt %]
C	Si	Mn	P	S	Ni	Cr	Mo	Co	Cu	Fe	
≤0.05	≤0.05	≤0.80	≤0.03	≤0.01	47.0~ 49.0	≤0.30	≤0.30	≤0.30	≤0.30	Bal.	

Physical Properties

Density	[g/cm ³]	8.2
Specific heat	[J/kg · K]	450
Electrical resistivity	[μΩ · cm]	44
Average coefficient of thermal expansion	[10 ⁻⁶ /°C] 25~100°C	9
Curie point	[°C]	460
Magnetism		Ferromagnetic
Melting range	[°C]	1416~1444

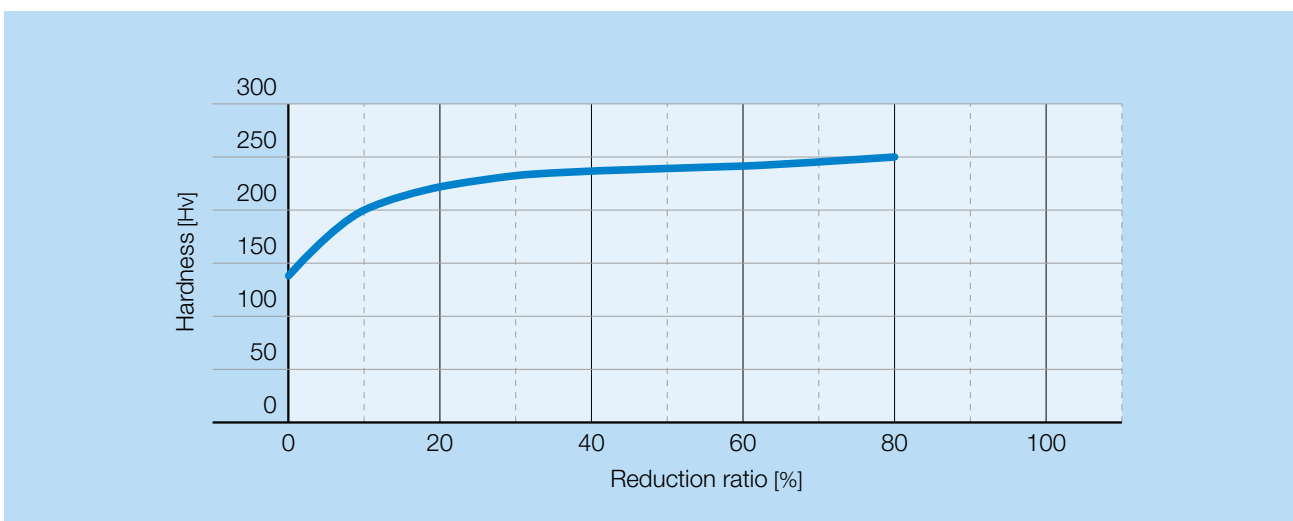


Mechanical Properties

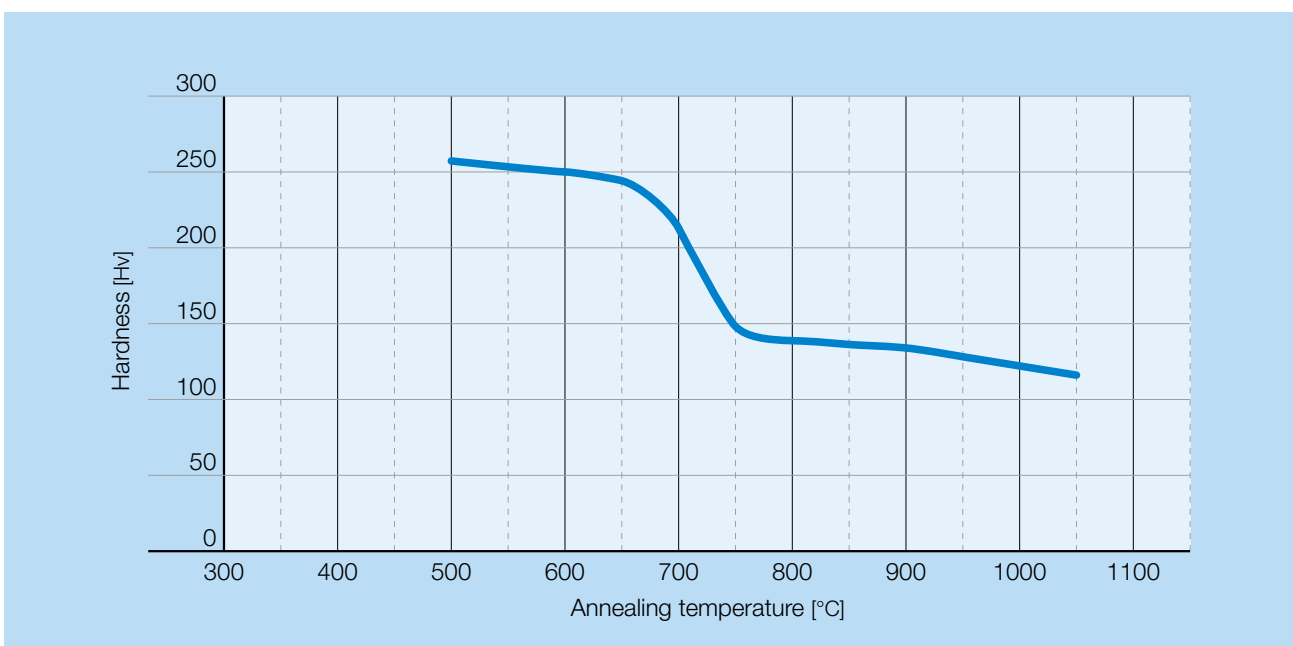
Mechanical Properties at Room Temperature

	0.2% proof stress [MPa]	Tensile strength [MPa]	Elongation [%]	Hardness [Hv]
Cold rolled and annealed material	260	520	35	140
As-rolled	800	860	3	240

Work Hardening Properties



Softening Properties



Magnetic Properties

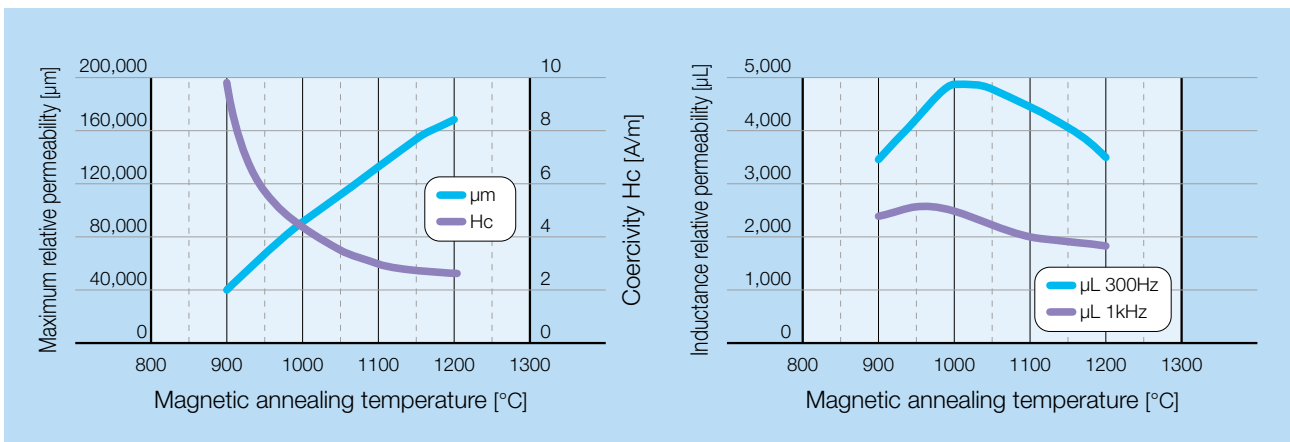
DC Magnetic Properties

Sheet thickness [mm]	Initial relative permeability [μ_i]	Maximum relative permeability [μ_m]	Coercivity [A/m]	Saturation magnetic flux density [T]	Magnetic annealing conditions
0.35	11,000	130,000	3.5	1.5	1100°C×3hr
0.35	19,000	175,000	2.9	1.5	1180°C×4hr

AC Magnetic Properties

Sheet thickness [mm]	Magnetic annealing conditions	Effective permeability [μ_e]	
		300Hz	1kHz
0.35	1100°C×3hr	4,000	2,000
0.35	1180°C×4hr	3,800	1,800

Effect of Magnetic Annealing Conditions on Magnetic Properties



Applications

Current/voltage sensors, transformers, magnetic shielding.

For more information, please contact:
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Note regarding the handling of property data:

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