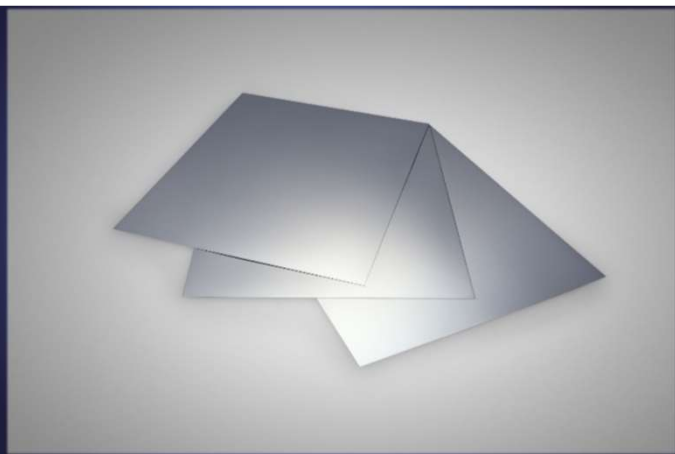


パーメンジュール YEP®-2V

Permendur YEP™-2V

高磁束密度軟磁性材料パーメンジュール "YEP®-2V" をモーターコアに用いることで、小型・軽量・高出力モーターを実現可能

Soft magnetic alloy with high saturation flux density, permendur "YEP™-2V", contributes to the realization of a compact, lightweight, high-power motor.



概要

Overview

YEP®-2Vは軟磁性材の中でも高い飽和磁束密度を有し、モーターや駆動部品の小型軽量、高出力化に貢献

YEP™-2V has high saturated magnetic flux density, which realizes compact, lightweight, high-power motors and high responsive actuators.

化学成分

Chemical composition

(mass%)

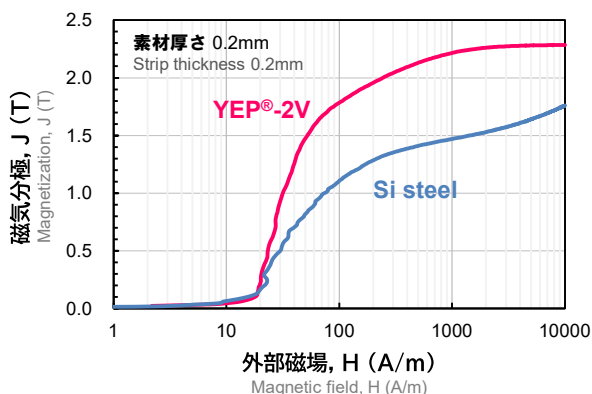
型番 Grade	Fe	Co	V
YEP®-2V	Balance	49	2

特長

Characterization

直流初磁化曲線(磁性焼鈍後*)

Initial D.C. magnetization curve after magnetic annealing*



保磁力 Coercive force H _c (A/m)	最大比透磁率 Maximum relative permeability μ _m (-)	磁束 Magnetic flux density B** (T)	
		B ₄₀₀	B ₈₀₀
33	24,500	2.15	2.23

*磁性焼鈍条件: 850°C×3h, 水素雰囲気中

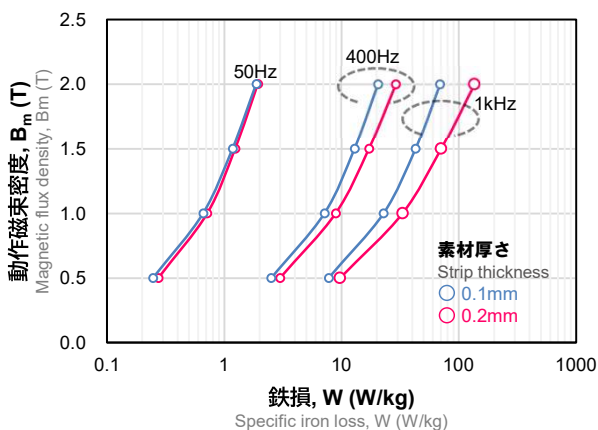
*Magnetic annealing : 850°C×3h in H₂

**下付き文字: 外部磁場 (A/m)

**Subscripts : applied magnetic field (A/m)

鉄損特性(磁性焼鈍後*)

Iron loss curve after magnetic annealing*



動作磁束密度 Magnetic flux density B _m (T)	鉄損 Specific iron loss W (W/kg)					
	素材厚さ 0.1mm Strip thickness 0.1mm			素材厚さ 0.2mm Strip thickness 0.2mm		
	50Hz	400Hz	1000Hz	50Hz	400Hz	1000Hz
0.5	0.2	2.5	7.7	0.3	3.0	9.7
1.0	0.7	7.1	22.7	0.7	8.9	33.0
1.5	1.2	12.8	42.6	1.2	17.1	70.3
2.0	1.9	20.5	68.7	1.9	29.1	134.7

*磁性焼鈍条件: 850°C×3h, 水素雰囲気中

*Magnetic annealing : 850°C×3h in H₂

物理特性(磁性焼鈍後*)

Physical properties after magnetic annealing

密度 Density ρ (g/cm ³)	熱伝導率 Thermal conductivity λ (W/m/K)	線膨張係数 Coefficient of linear expansion α_{20-200} (10 ⁻⁶ /K)	電気抵抗率 Electrical resistivity ρ ($\mu\Omega\text{m}$)	キュリー温度 Curie temperature T_c (°C)
8.1	32	9.4	0.4	960

*磁性焼鈍条件: 850°C×3h, 水素雰囲気中

*Magnetic annealing : 850°C×3h in H₂

機械特性(素材厚さ0.2mm)

Mechanical properties (Strip thickness 0.2mm)

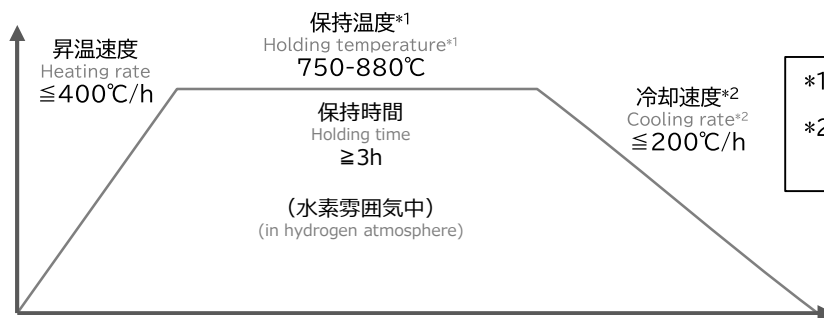
状態** Condition	0.2%耐力 0.2% Yield strength $\sigma_{0.2}$ (MPa)	引張強さ Tensile strength σ_{max} (MPa)	ヤング率 Young's modulus E (GPa)	伸び Elongation ϵ_f (%)	ビッカース硬さ Hardness H _v (HV)
圧延まま As rolled	1295	1373	220	1.2	421
磁性焼鈍後 After annealing	229	589	240	7.4	203

** 標準供給状態: 圧延まま

** Delivery condition : As rolled

熱処理条件

Heat treatment



*1 標準850°C(890°Cを超えないこと)

Standard temperature 850°C (Do not exceed 890°C)

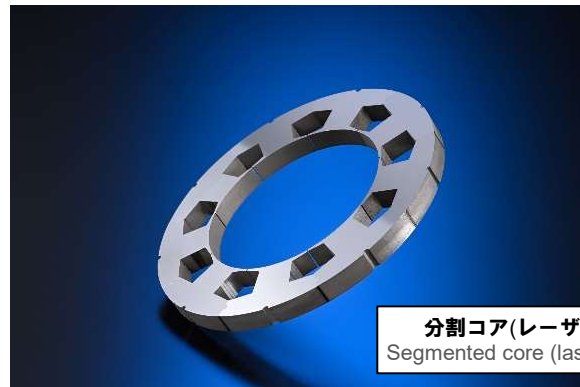
*2 不活性ガス置換は400°C以下で実施することを推奨
Replacement with inert gas (e.g. Argon) should be conducted at 400°C or less.

応用例

Applications

積層コア(モーター、アクチュエーター等)

Laminated core (motor, actuator, etc.)



分割コア(レーザー溶接)
Segmented core (laser welding)

製品形状

Product form

帯 Strip	板 Plate	棒 Bar	線 Wire
○	○	○	○

Contact Us

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Note 1) Please note that the composition and properties cited in this document are typical data and are not guaranteed.

2) YEP is the trademark of Proterial, Ltd.