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Iron Powders Expand Applications of Iron with Various Functions

o R Å ‡ (Kuniaki Ogura)

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Synopsis :

Kawasaki Steel started the integrated production of reduced iron powder in 1966, when iron powder started to regularly be applied to automobile sintered parts. Moreover, Kawasaki Steel has been the only iron and steel powder manufacturer in Japan producing both reduced and atomized iron powders. KIP(R) brand iron powders are expanding the applications of iron via various uses, considering the nature of iron and powder. For the improvement of productivity by decreasing the dimension scattering of parts or shortening the heat-treatment of sintered products, accordingly iron powder has been applied taking account of the nature of iron mechanics and the flowability and forming by compression of powder. For this application, Kawasaki Steel supplies segregation-free powders and alloy steel powders for high strength parts. With the iron's magnetic nature and the small particle diameter of powder, the chemical properties of iron and large particle-specific area of powder, iron powder is applied to electromagnetic material, such as the dust core or oxygen absorber, body warmer, and chemical raw materials to recover metals of value in the process effluent. ISO9001 and ISO14001 certification have been granted for iron powder production and products at

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多様な機能で鉄の用途を広げる鉄粉*

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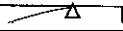


要旨

川崎製鉄は、自動車増産部品への鉄粉の使用が本格化し始めた

1500

Conventional mixed powder



Mixing

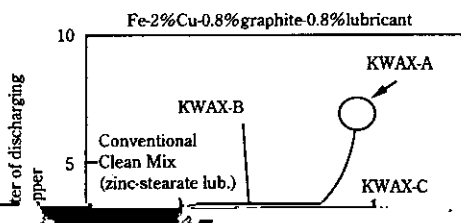
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Segregation-free treated

Table 1 Properties of powders and sintered compacts of the Cu segregation-free KIP Clean Mix powder

Powder	Apparent density (Mg/m ³)	Tensile strength (MPa)	Impact value (J)	Dimensional change during sintering (vs. die cavity)	
				Dimensional change (%)	Standard deviation, σ (%)
Cu segregation-free Clean Mix	3.35	467	11	0.39	0.016

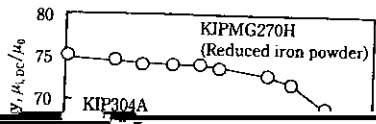
Composition: Fe-2%Cu-0.8%graphite-0.8%lubricant
 Specimen: $\phi 38 \times \phi 25 \times 10$ t
 Green density: 6.85 Mg/m³
 Sintering: 1130°C × 20 min in endothermic gas



KWAX」の使用により焼結機械部品の生産性、品質を格段に向上させることができる。

3.4 その他の焼結機械部品用途

焼結機械部品の製造では、できる限り生産性を高めることが求められるが、川崎製鉄だけはこのようなニーズに応えるよう、焼結由に



4.2 化学反応用

鉄が酸素や他の元素と反応する化学的性質と粉末のばらつき