

KAWASAKI STEEL TECHNICAL REPORT

No.42 (May 2000)

New Flowable Segregation-free Premixed Iron Powder with Wax Lubricant

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Synopsis :

New segregation-free iron based powder with wax lubricant, KIP CLEANMIX(R) (KWAX-B), was developed to improve the flowability and suppress the adhesion of lubricant to the inner parts of tube conveyer during transportation. The flow rate of CLEANMIX (KWAX-B) was lower by 0.5 s/100 g than that of the conventional segregation-free iron based powder with wax lubricant, CLEANMIX (KWAX-A) and the index of flow blocking was smaller by 62%. Lubricant was hardly adhered to the inner parts of screw conveyer during transportation of CLEANMIX (KWAX-B). On the other hand, lubricant was adhered during transportation of the conventional segregation-free iron based powder with wax lubricant. The powder characteristics, such as compressibility, Rattler value and ejection force of CLEANMIX (KWAX-B), and the mechanical properties, such as tensile strength, Charpy impact value and dimensional change of sintered steel made of it, were almost equal to those in the case of the conventional segregation-free iron based powder with wax lubricant.

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The body can be viewed from the next page.

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Synopsis:

New segregation-free iron based powder with wax lubricant, KIP CLEANMIX® (KWAX-B), was developed to improve the flowability and suppress the adhesion of

which revealed that flowability does not depend on the



[REDACTED]

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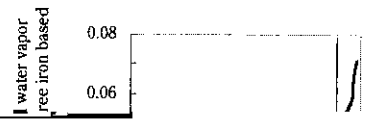
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Lubricant 

Table 3 van der Waals force calculated

Combination of powder	van der Waals force (10^{-15} N/particle)
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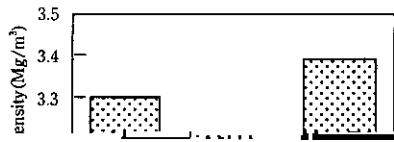


Table 4 Tensile strength and Charpy impact value of sintered body made of the segregation-free iron based powder used and dimensional change during sintering

(4) The newly developed wax type KIP CLEANMIX

(1) The van der Waals forces which act between the Charpy impact value and dimensional change of sin...

binders and lubricant of the iron powder surface and tapered steel after sintering as fine steels type gears