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Segregation-Free KIP CLEAN MIX Powders

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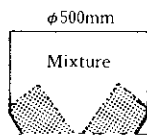
Synopsis:

New mixed powders, KIP CLEAN MIX, were developed to minimize segregation and dusting by a treatment which firmly bonds graphite and other additive powders onto the surface of the iron powder particles. The segregation-free treatment gives a C-adhesion ratio (the ratio of carbon content in 100-200 mesh powder mixtures to carbon con

2 was sampled, compacted and sintered, a uniform
6.8 Mg/m^3 was applied as the compacting condition, and

To confirm the superiority of KIP CLEAN MIX,
changes in the apparent density, porosity, and CIP

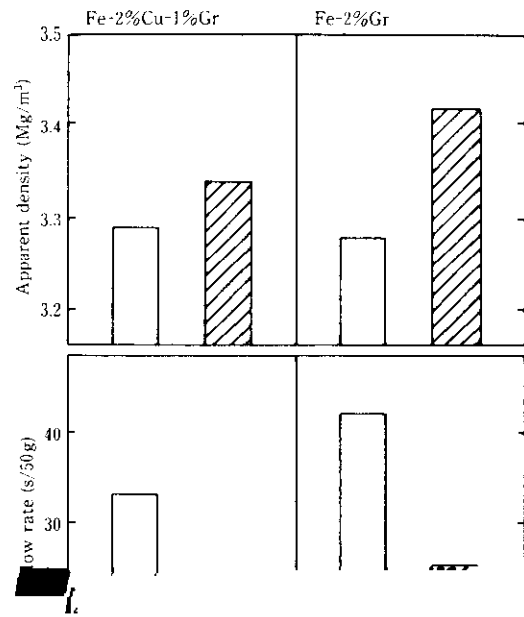
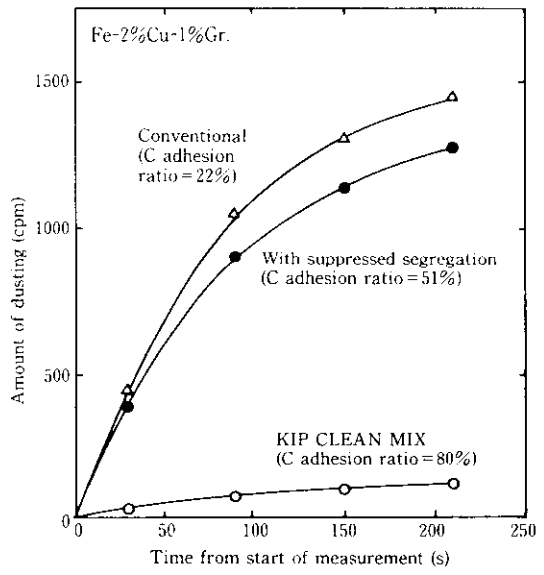
sintering was conducted at 1130°C for 20 min in an
endothermic gas atmosphere ($\text{CO}_2 = 0.3\%$).



tent from the hopper to continuous discharge were
compared against those with conventional mixed pow-
ders, simultaneously with the trend in the characteris-
tics of continuously compacted and sintered pieces
made under customers' actual use conditions. The flow
of this experiment is shown in Fig. 3.

3.3 Effect of Additives

Finally, the effect on properties of the additives used



tional

CLEAN
MIX

tional

CLEAN
MIX

density
(m³)

3.40



70



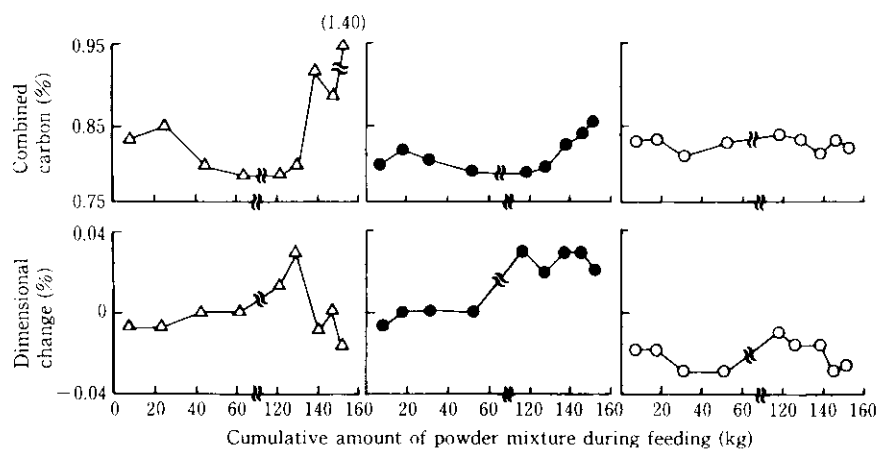
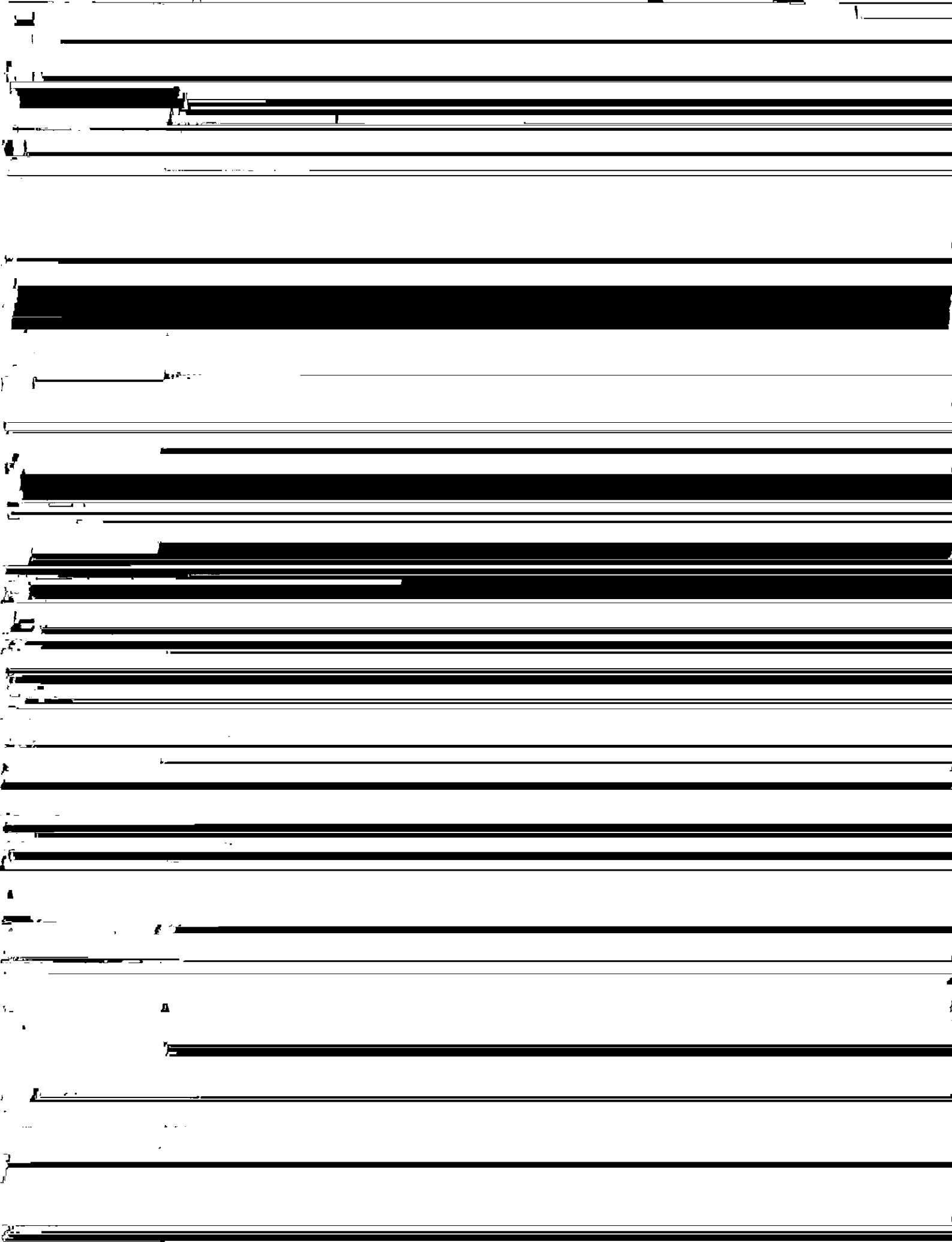


Fig. 11 Variation in dimensional change (powder compact basis) during sintering and combined carbon

○ : Conventional ● : KIP CLEAN MIX

0.6



still unclear, an elucidation of the cause and quick
improvement are needed.

dimensional change and mechanical strength in sin-

5. Conclusions

- (5) The use of segregation-free KIP CLEAN MIX powder not only results in an improved environment by