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## Exothermic Steel

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## CORRESPONDENCE.

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### Exothermic Steel.

*To the Editor of Metallurgical and Chemical Engineering:*

SIR: I see in your issue of September 1 an article describing "Exothermic Steel," a new trade product invented by Mr. George Fogler and described by W. O. Amsler, D.Sc.

The fact that the method is patented and that the description is sponsored by a scientific man challenges serious attention to the statements made and forbids us dismissing them as merely fanciful.

The statement is baldly made that a mixture of feldspar, bauxite and lime acts as a reducing agent on iron oxide, reducing it to metallic iron, with a strong exothermic reaction. The aluminium compound in these fluxes is said to act reducingly upon the ore. In practise this reaction is said to be so strongly exothermic as to require some carbon to be admixed in order "to keep the temperature within safe limits."

I am sorry to see any scientific man make such statements. The statements are mere bosh. The chemical equations given as representing the reactions are erroneous, inasmuch as potash feldspar is  $KAlSi_3O_8$ , and not  $KAl_2Si_3O_8$ ; and while the extra free atom of aluminium is needed to complete the equations given and to supply the exothermic heat talked about, yet unkind Nature has not supplied it in potash feldspar.

The author further talks about running a "matte" furnace with such a charge, with some carbon admixed to keep the temperature down (*sic*), and blowing in oil or gas flames by air under pressure. The metal does not appear in this "matte" in its free state, but "exists in a state of solution or similar condition, or perhaps even as a silicate of iron, although the writer is inclined to doubt this."

I share his doubts; in fact, I will go him several better, and *doubt the whole thing* until some reputable metallurgist describes the operations in terms which are understandable, and makes statements which are believable. JOS. W. RICHARDS.

*Lehigh University.*