Gas reduction in Factsage
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Influence of reductant and pressure on reduction of FeO

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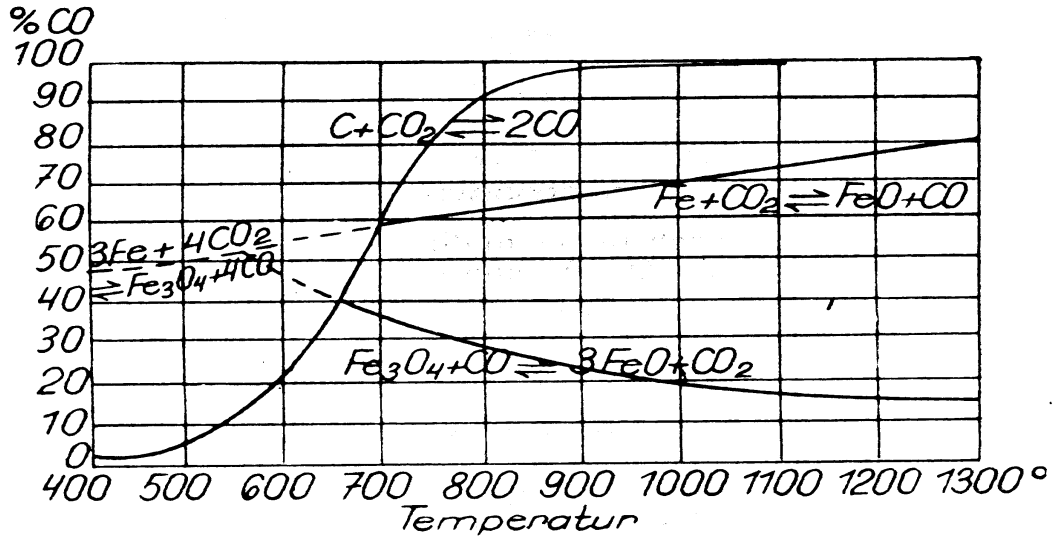
Abstract

The first step of making steel in a conventional iron and steel plant is the reduction of iron oxide (as Fe2O3 or Fe3O4) in a blast furnace. Reduction from Fe3O4 to FeO is easy, from FeO to Fe is more difficult.
In the old literature the chemical equilibria of reduction were represented in a Bauer Gläsener diagram. Often diagrams were made based upon measurements in laboratory from either reduction with CO or H2 (see example of Dürrer below) :



In this presentation an attempt is made to represent the chemical equilibria in the same way. Since the amount of reduction is the main purpose of the reactions an O/Fe line is added to represent the extent of reduction.
If it is possible to reproduce these old data, then it will also be possible to evaluate the influence of changes in reduction from gas mixtures, or the influence of pressure on the reduction.