

# Fe-H (Iron-Hydrogen)

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The Fe-H phase diagram in [Massalski2] was redrawn from [1990San]. This was a partial diagram for 1 atm. showing 0 to ~0.25 at.% H and 0-1800 °C. Figure 1 shows the Fe-H phase diagram calculated by [2002Zin]. The phase relationships in this diagram are similar to those of [1990San], but it covers a wider temperature range including the vaporization of Fe. Figure 2 is the Fe-H phase diagram at 10 MPa calculated by [2002Zin].

## References

- 1990San:** A. San-Martin and F.D. Manchester: "The Fe-H (Iron-Hydrogen) System," *Bull. Alloy Phase Diagrams*, 1990, 11(2), pp. 173-84.
- 2002Zin:** M. Zinkevich, N. Mattern, A. Handstein, and O. Gutfleisch: "Thermodynamics of Fe-Sm, Fe-H, and H-Sm Systems and Its Application to the Hydrogen-Disproportionation-Recombination (HDDR) Process for the System Fe<sub>17</sub>Sm<sub>2</sub>-H<sub>2</sub>," *J. Alloys Compd.*, 2002, 339, pp. 118-39.

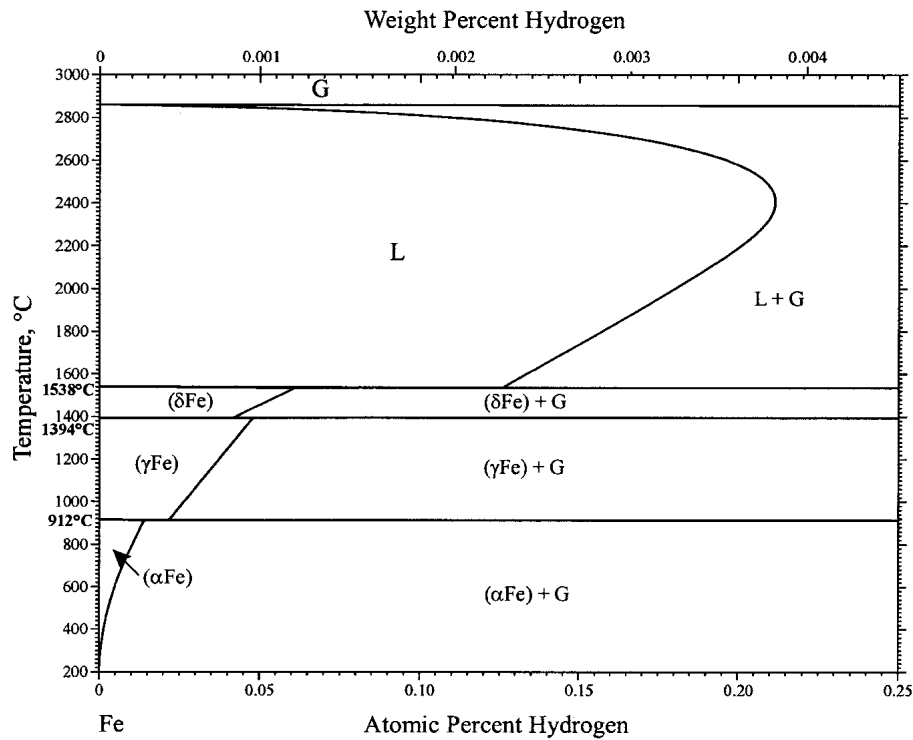


Fig. 1 Fe-H phase diagram at 1 atm. (from [2002Zin])

### Section III: Supplemental Literature Review

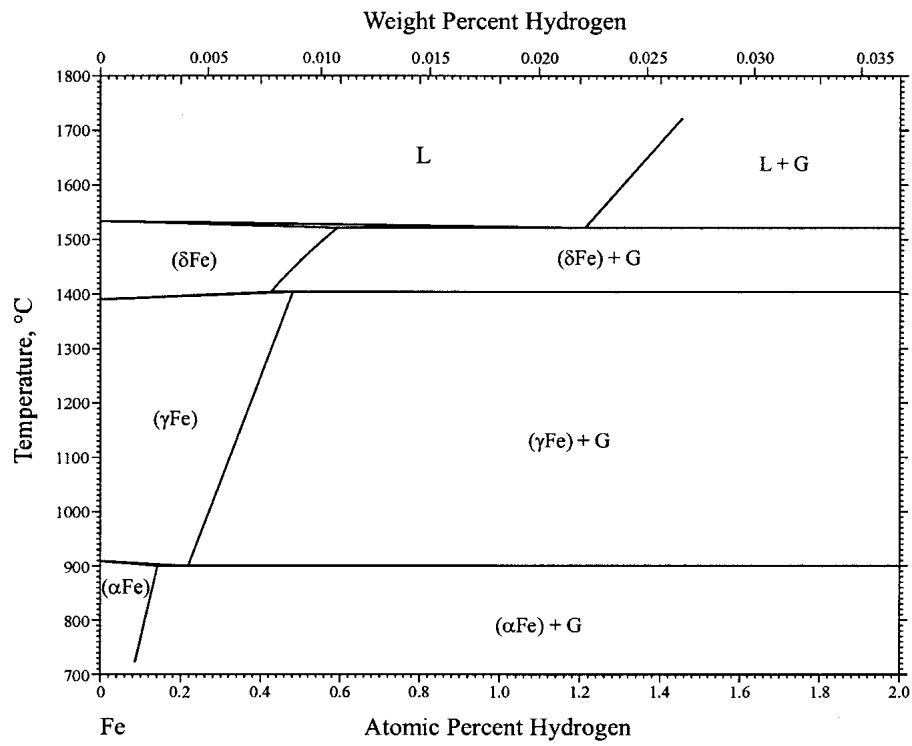


Fig. 2 Fe-H phase diagram at 10 MPa (from [2002Zin])