

MSE-305

Iron -carbon phase diagram

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Fe-Fe₃C metastable phase diagram:

The composition axis extends only to 6.67 wt% carbon.

At this concentration the intermediate compound (Fe₃C or cementite) is formed so Fe-Fe₃C phase diagram can be divided into two parts:

1. Iron - rich portion (upto 6.67 wt% carbon)
2. Carbon - rich portion (6.67 wt% carbon to 100 wt% carbon) or pure graphite.

A portion of the Fe-C diagram or more decidedly the Fe-Fe₃C phase diagram is an important one (from pure Fe to 6.67 wt.% C).

6.67 wt% carbon corresponds to 100 wt% cementite.

This phase diagram represented the full range of iron-carbon system covering both Steel and Cast Iron.

Compositions upto 2.1 wt% C are called Steels.

Ferrous alloy contains more than 2.1 wt% C are called Cast Irons.



