



Iron – iron carbide Equilibrium diagram



- Pure iron exists in three allotropic forms before it melts
 - α – Iron
 - δ – Iron
 - γ – Iron
- Stables at temperatures up to 908°C (α - Iron) –BCC
- Stables between 908°C and 1388°C (γ – Iron)-FCC
- Stables between 1388°C and 1539°C (Melting Point). (δ – Iron) -FCC

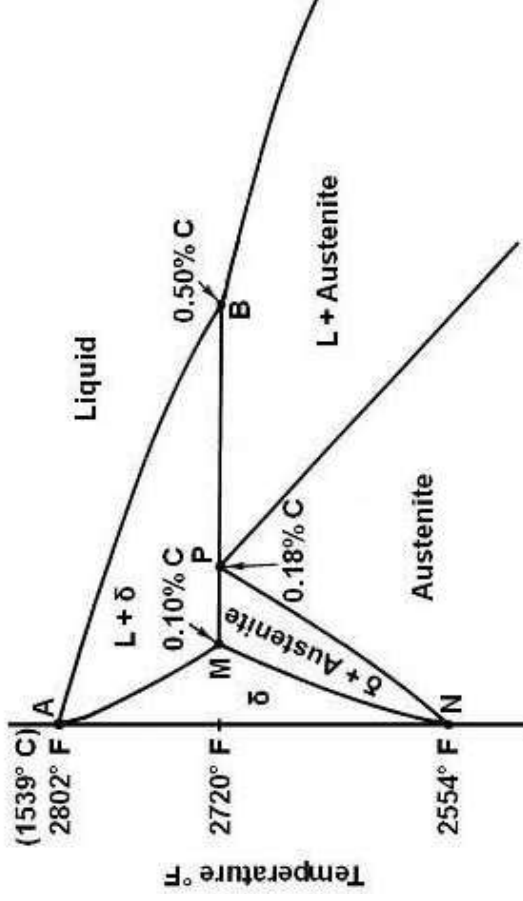


Invariant reactions in the Fe-Fe₃C

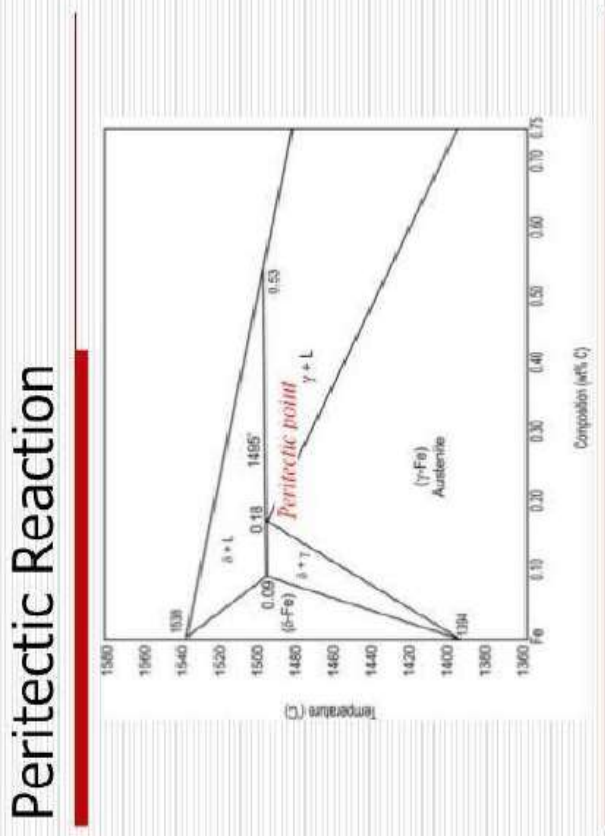


Phase Diagram

Peritectic reaction



The delta region of the iron-iron carbide diagram



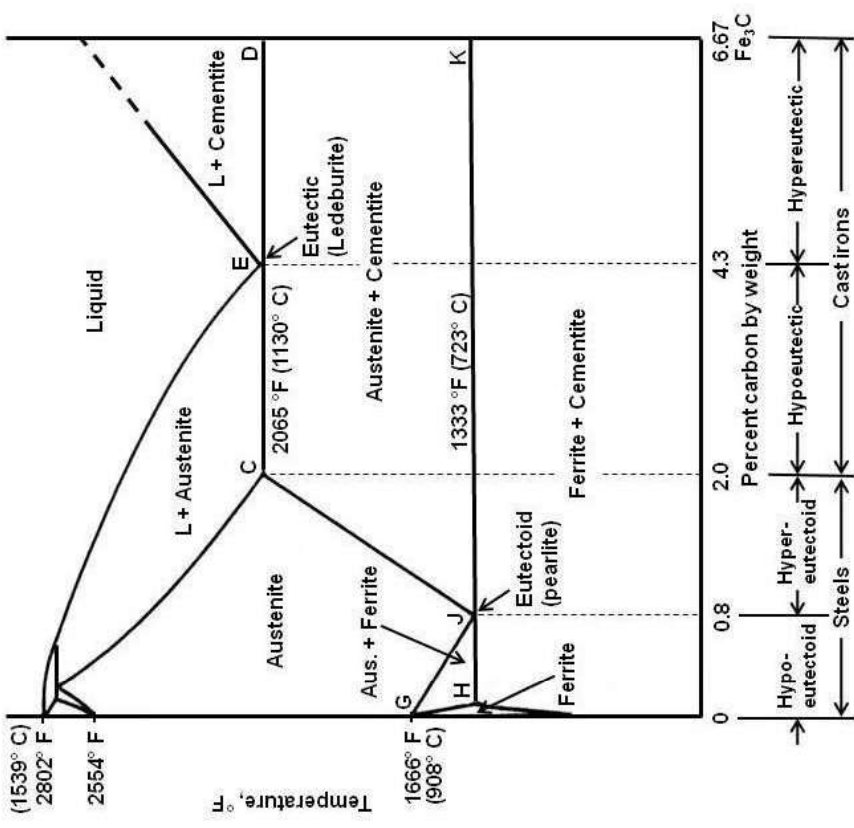


Invariant reactions in the Fe-Fe₃C

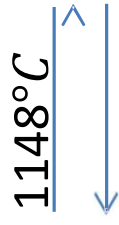


Phase Diagram

Eutectic reaction



The iron-iron carbide equilibrium diagram labeled with common names



Liquid (4.3%C)

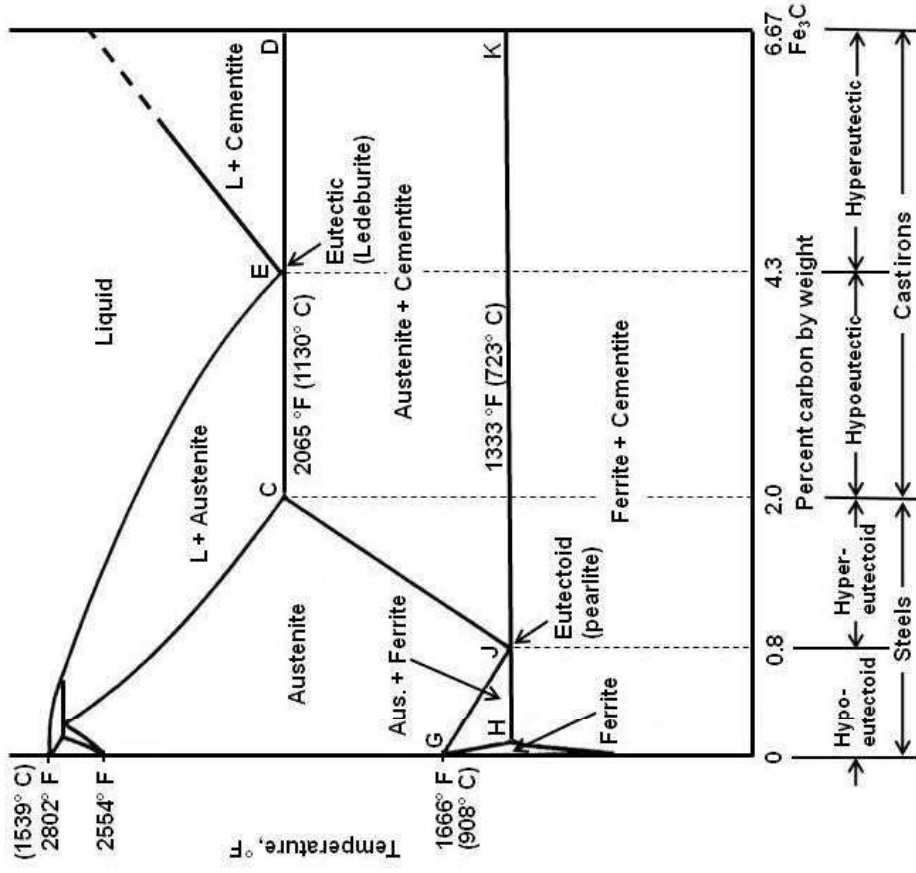
γ Austenite(0.09%C) + Fe₃C(6.67%C)



Invariant reactions in the Fe-Fe₃C Phase Diagram



Eutectoid reaction



The iron-iron carbide equilibrium diagram labeled with common names

