

UNIT 3 – ACTIVITY 2 – FILL-IN-THE-BLANKS

Fill in the missing words

The [] properties of steel are greatly influenced by the carbon content of the alloy. In the liquid phase, carbon is [] soluble, but it is only [] soluble in the solid [] structures that form as the alloy cools.

Austenite exhibits the high ductility typical of the [] structure and is the phase in which hot forming is carried out. Most heat treatment processes begin with the steel being heated sufficiently to transform the iron into the [] phase. The key transformation occurs when single-phase austenite cools and transforms into a mixture of the two phases ferrite and [] .

Carbon forced out of solution in the transition from austenite to ferrite forms an intermetallic compound called [] . Typical of intermetallic compounds, cementite is both hard and [] . It can confer useful properties on the alloy if dispersed evenly but can prove problematic if present in large or [] concentrations.

[] is the process of re-forming and refining the grain structure of the metal. Smaller consistently shaped and sized grains tend to provide enhanced strength and [] .