

Magnetic Phase Diagram of Amorphous Fe_{100-x}Sc_x

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An overview will be given on the magnetic properties of amorphous Fe_{100-x}Sc_x alloys. The experimental magnetic phase diagram in an external field of 100 Oe is established on amorphous films that were prepared in ultra high vacuum.

At $x = 25$, there exists a competing exchange coupling between iron atoms. At $x > 41$, Sc atoms carry magnetic moments which couple antiferromagnetically to the Fe-atoms. Because of the complexity of the exchange interaction in the present system, antiferromagnetic as well as ferromagnetic and (reentrant) spin glass ordering was observed.