

2) A) CONVENTIONAL SUPERCONDUCTORS:

These are superconductors that require liquid He for cooling. Usually Neobium alloys are used as conventional superconductors. Nb₃Sn having critical temperature of 18.3 K.

However Neobium alloys are brittle and cannot be fabricated in the form of wires. Hence they have been replaced by Vanadium Gallium alloy which can be easily manufactured in the form of wires.

Although these alloys are being manufactured they do not find much application because of their poor mechanical properties.

B) HARD SUPERCONDUCTORS:

The materials that behave as superconductors at unusually high temperature.

APPLICATIONS:

Alloys of Nb₃Sn, Nb₃Ge, Nb₃Al and V₃Si are used to make wires for powerful electromagnets which have a variety of uses such as

- 1) As atom smashers for high energy particle physics research.
- 2) In nuclear fusion research to produce powerful magnetic fields.
- 3) In chemical laboratories for nuclear machines.
- 4) In SQUIDS (Superconducting Quantum Interference Devices) used in electronics to produce very low noise amplifiers
- 5) They are used in power transmission in computers to get rid of unwanted heat and in powerful electromagnets.

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