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Insulator

least flow electricity

Semi Conductor

NOT Conductor
Resistance to flow of electrons
 $\frac{e^-}{heat}$

allows or resists flow of electricity
 $\frac{e^-}{heat}$

Conductor

transfers electricity
allows e^- to flow
 $\frac{e^-}{heat}$

Super Conductor

most flow electricity

NOT insulator
Always allows flow of electrons; e^- , heat
When supercooled it loses all resistance

made of

wood styrofoam rubber

elements (Si) metalloids

metal

very hard alloys
thick of metals

Use

anywhere electricity must be controlled

tech

anywhere electricity must flow

MRI med tech
fusion reactor

Pros

not expensive
very small

most E release
clean

Cons

difficult to cool
expensive