

Distinguish, differentiate, compare and explain what is the difference between Elemental and Compound Semiconductors. Comparison and Differences.

## **Difference between Elemental and Compound Semiconductors**

1. Elemental Semiconductors are made from single element also known as mixed element. Compound Semiconductors as the name say are made from compound.
2. Elemental Semiconductors are made up from IV group and VI group elements. Compound Semiconductors are made from III and V group elements or II and VI group elements.
3. Elemental Semiconductors are called as indirect band gap semiconductor in which electron-hole recombination takes place through traps. Compound Semiconductors are called as direct band gap semiconductor in which electron-hole recombination takes place directly.
4. For Elemental semiconductors, Heat is produced in the recombination while for Compound semiconductors, Photons are emitted during recombination.
5. For Elemental semiconductors, Life time of charge carriers is more due to indirect recombination. For Compound semiconductors, Life time of charge carriers is less due to direct recombination.
6. In elemental, current amplification is more as compared to compound semiconductors.
7. Elemental Semiconductors are used for making diodes, transistor, etc. Compound Semiconductors are used for making LED, laser diodes, etc.
8. Example of Elemental semiconductors are Ge, Si. Example of Compound semiconductors are GaAs, GaP, CdS, MgO.