

CHEMISTRY
ASSIGNMENT
CRYSTAL
DEFECTS



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21/05/22

Crystal Defects:-

(5/5) Div.

Imperfection in the regular geometrical arrangement of the atoms in a crystalline solid. These imperfections result from deformation of the solid, rapid cooling from high temperature, or high-energy radiation like x-rays or neutrons striking the solids.

Types of crystal defects:

- i) Point defects: Zero dimensional defects
- ii) Line defects: One dimensional defects
- iii) Surface defect: Two dimensional defects
- iv) Volume defects: Three dimensional defects

i) Point defects: A point defect can be an atom missing from a site in the crystal or an impurity atom that occupies either a normal lattice site or a hole in the lattice between atoms.



ii) Line defects: Lines along which whole rows of atoms in a solid are arranged.

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Chemistry

Assignment

- :- Defects in Crystals
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Crystal Defect :- Imperfection in the regular geometrical arrangement of the atoms in the crystalline solid. Mainly 2 types

- ① Point defects are defects that occur only at or around a single lattice point.
- ② Line defects are irregularities or deviations from ideal arrangement in entire rows of lattice points.

Point Defect is classified into 3 types :-

- a) Stoichiometric defect.
- b) Impurity defect.
- c) Non-stoichiometric defect.

a) Stoichiometric defect :- These defects points that do not disturb the stoichiometry of solid. They are called intrinsic defect.

Has two types :-

i) Vacancy defect :- When some of lattice sites are vacant, the crystal is said to have vacancy defect. This decrease in density of substance.

ii) Interstitial Defect :- When some constituent particles occupy an interstitial site the crystal is said to have interstitial defect.

Vacancy and interstitial defect explained for non-ionic solid Amal

