

ATOMS AND MOLECULES

SUBJECT-CHEMISTRY

CHAPTER NO- 3

Dalton's Atomic Theory and its Drawbacks

PERIOD-3

CHANGING YOUR TOMORROW



LEARNING OBJECTIVE

Students will be able to

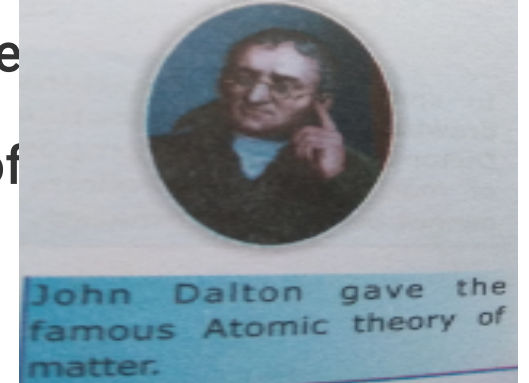
- Know about the Postulates of Dalton's Atomic Theory.
- Get aware of the various Drawbacks of the Dalton's Atomic Theory



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DALTONS ATOMIC THEORY

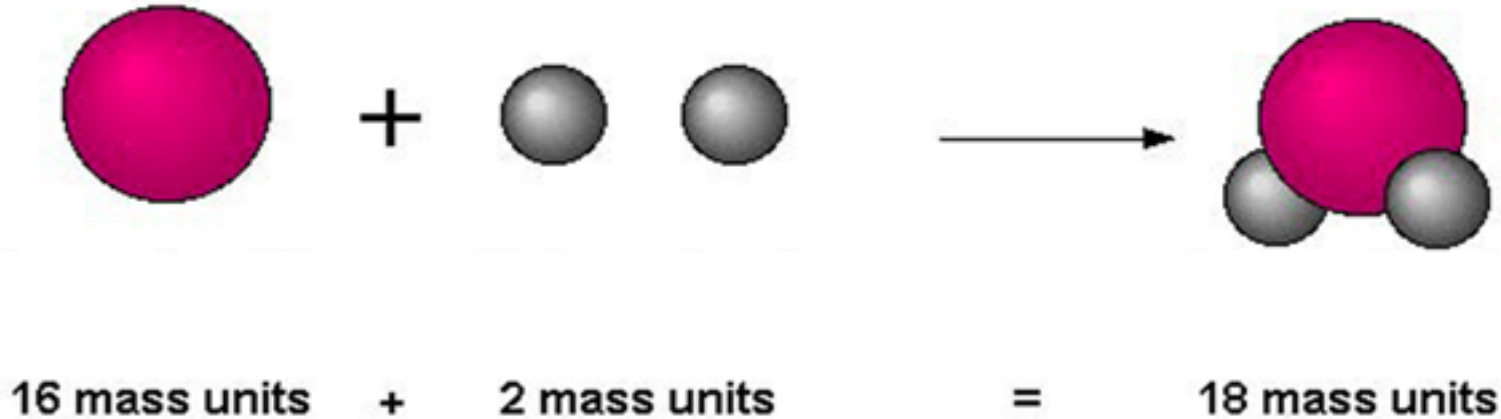
1. The matter is made up of indivisible particles known as atoms.
2. The properties of all the atoms of a given element are the same including mass. This can also be stated as all the atoms of an element have identical mass and chemical properties; atoms of different elements have different masses and chemical properties.
3. Atoms of different elements combine in fixed ratios to form compounds.
4. Atoms are neither created nor destroyed. The formation of new products (compounds) results from the rearrangement of existing atoms (reactants) in a chemical reaction.
5. The relative number and kinds of atoms are constant in a given compound.



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Diagrammatic Representation of Dalton's Atomic Theory

Dalton's Atomic Theory



DRAWBACKS OF DALTONS ATOMIC THEORY

- Atoms can be further divided into sub-atomic particles like -Electrons, Protons and Neutrons.
- Atoms of the same elements may have different mass number. The existence of isotopes proves that (6C^{12} and 6C^{14})
- Atoms of the different elements may have same mass number. The existence of isobars proves that (18Ar^{40} and 20Ca^{40})
- Atoms of the different elements may not combine always with same whole number ratio to form compounds. Example Sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) in the ratio 12:22:11 which is not a whole number.



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WATCH A VIDEO

<https://youtu.be/eyzVBiapXtM>



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HOME ASSIGNMENT

- Exercise-1 (Q3, Q4 & Q6)
- Mention the postulates of Dalton' Atomic Theory.
- What are the Drawbacks of the Dalton's Atomic theory?



THANKING YOU

ODM EDUCATIONAL GROUP

