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H₂S is Less Acidic Than H₂Te . Give Reason: Acids and Bases (For CBSE, ICSE, IAS, NET, NRA 2022)

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Acids and Bases

- Acids and bases are popular chemicals which interact with each other resulting in the formation of salt and water.
- The word acid comes from a Latin word **acere** which means **sour**
- The orange or grapefruit juice you drink for breakfast contains citric acid (also known as Vitamin C) .
- When milk turns sour, it contains lactic acid.

Properties of Acids

- Acids are corrosive in nature.
- They are good conductors of electricity.
- Their pH values are always less than 7.
- When reacted with metals, these substances produce hydrogen gas.
- Acids are sour-tasting substances.
- Examples: Sulfuric acid [H₂ SO₄], Hydrochloric acid [HCl], Acetic acid [CH₃ COOH] .

Properties of Bases

- They are found to have a soapy texture when touched.
- These substances release hydroxide ions (OH⁻ ions) when dissolved in water.
- In their aqueous solutions, bases act as good conductors of electricity.
- The pH values corresponding to bases are always greater than 7.
- Bases are bitter-tasting substances which can turn red litmus paper blue.
- Examples: Sodium hydroxide [NaOH], milk of magnesia [Mg (OH)₂], calcium hydroxide [Ca (OH)₂]

H₂S is Less Acidic Than H₂Te

- *H₂S* is less acidic than *H₂Te* because on moving down the group the size of the atom increases and ionization enthalpy decreases.
- Te has larger radius than S.
- On moving down, the oxygen family, the acidic nature of hydride increases due to weak bonds and stability of the conjugate base.
- On moving down, the oxygen family the size increases due to the addition of a new shell.
- This helps to dissociate the bond easily.
- So, taking the case of *H₂Te* and hence the removal of a hydrogen ion from this compound becomes easy and acidity is higher due to this.
- But in case of H₂S the bond dissociation is less and hence acidity is lower.
- So *H₂S* is thus less acidic than *H₂Te*

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