

This is due to

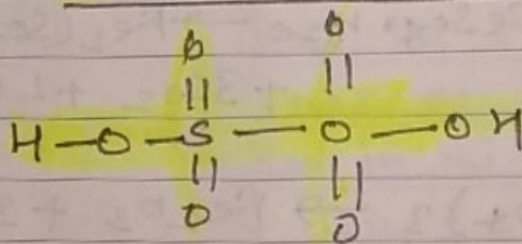
०७ कार्तिक शुक्ल, शनिवार, सं० २०७७

the escape of sulphur trioxide. It changes into ordinary sulphuric acid on warming as the dissolved sulphur trioxide escapes into the air. It solidifies on cooling below 0°C . It is used in the manufacture of dyes and explosives and in refining of petroleum.

It forms salts known as pyro sulphates, sodium pyrosulphate $\text{Na}_2\text{S}_2\text{O}_7$, is definitely known. Therefore, it is highly probable that the acid is a definite compound of the composition $\text{H}_2\text{S}_2\text{O}_7$.

Structure of Pyrosulphuric acid

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[Per sulphuric acid.]

Two persulphuric acids are known

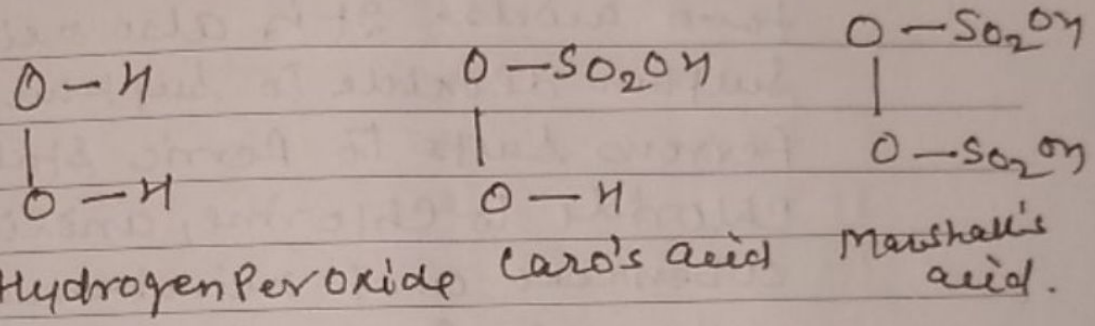
These are.

- (1) Peroxomonosulphuric acid - H_2SO_5 and
- (2) Peroxodisulphuric acid $\text{H}_2\text{S}_2\text{O}_8$ or simply persulphuric acid

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acid is known also as Caro's acid and the latter as Marshall's acid, after the names of their discoverers

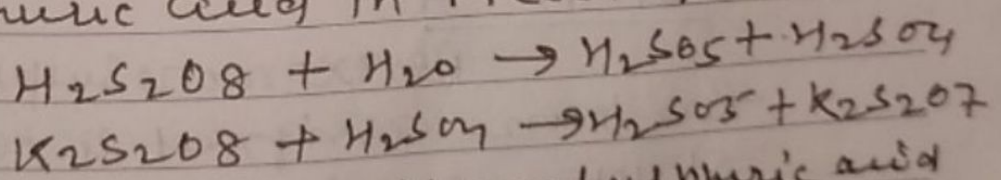
These compounds may be considered as derived from hydrogen peroxide by the replacement of one or both atoms of hydrogen by sulphonic groups



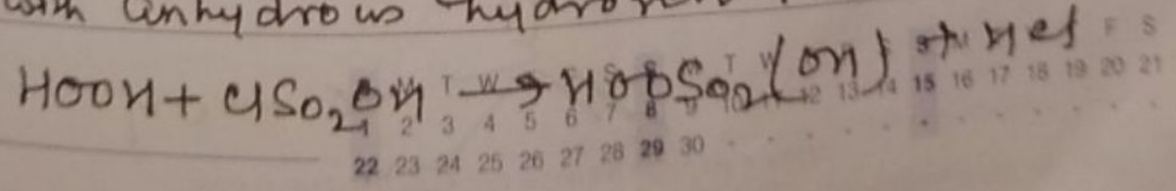
Caro's acid, Peroxomonosulphuric acid
[H₂SO₅]

This is obtained

- ① By the slow conversion of Peroxodisulphuric acid in aqueous solⁿ or by grinding, Potassium Persulphate crystals with conc Sulphuric acid in freezing mixture.



- ② By the reaction of chlorosulphuric acid with anhydrous hydrogen peroxide.





Crystalline mass (M.P. 158°C) मंगलवार, सं० २०१३

It is fairly stable. It has strong oxidising properties, as such it is stronger than Per sulphuric acid. Thus, it liberates iodine from Potassium Iodide much more readily than Per sulphuric acid does. This serves to distinguish between the two acids. It also oxidises sulphur dioxide to sulphur trioxide, ferrous salts to ferric state, hydrogen chloride to chlorine, aniline to nitrobenzene and nitrobenzene.

It precipitates Peroxides from salts of copper, silver, magnesium etc, However no solid salt of Caro's acid are known, However a solution of KHSO_5 is believed to be formed by the action of hydrogen peroxide on KHSO_4 . The acid, therefore is considered to be monobasic

Structure

Peroxo monosulphuric acid has been assigned a tetrahedral structure as shown.

