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## **Managing Hydrogen Sulphide in Petroleum Refinery**

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### **Abstract**

Hydrogen Sulphide is produced during the process of hydro treatment for de-sulphurisation, and hydro cracking operation for improvement in quality of petroleum products. H<sub>2</sub>S is also evolved during the process of sour water treatment and Sulphur Recovery from fuel gas. Hydrogen Sulphide Gas being highly toxic in nature, it requires preventive action and safe handling practices for personal safety and safe disposal without resulting in H<sub>2</sub>S exposure, use of detection and protective equipment for monitoring the accidental presence of H<sub>2</sub>S and prevent from H<sub>2</sub>S exposure. This paper deals with the facts relating to H<sub>2</sub>S, its material health and safety data, sources of H<sub>2</sub>S generation in petroleum refinery which are critical and requires protection for safe handling and disposal of H<sub>2</sub>S especially from Sour Water stripping system, amine treating system for flue gas de-sulphurization, and Sulphur recovery units. A few case studies on H<sub>2</sub>S exposure which has been discussed reminds the safe work practices to be followed .

The paper also describes the corrosion aspect of Hydro Sulphide in overhead system of certain fractionation towers in hydro-cracker & hydrotreater effluent streams, in sour water stripping and in Amine Treating Units which may help in deciding the metallurgy & practice for preventing equipment failure.