

CRUDE ACCOUNTABILITY

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A PROFILE OF PETROCHEMICAL EMISSIONS

Hydrogen Sulfide (H₂S)

H₂S, also known as “Sewer Gas,” is found in crude petroleum, natural gas, refinery gas, and oil well emissions. Natural gas can be comprised of up to 28% H₂S. At very low concentrations, it has a distinct rotten egg smell, but at high concentrations (above 100 ppm), it deadens the sense of smell entirely, making it a silent killer ([NCBI](#)). Fossil fuels with a high concentration of H₂S are termed “sour”.

H₂S is a highly toxic, flammable, and corrosive gas that poses significant risks to infrastructure and aquatic ecosystems, particularly when it interacts with moisture or in oxygen-depleted (anaerobic) conditions, [destroying](#) roots and leading to rapid coastal and riverbank erosion ([NCBI](#)). H₂S is oxidized in the atmosphere to eventually form sulfuric acid (H₂SO₄), the main compound of acid rain. H₂S is highly soluble in water and can [accumulate](#) in equipment, potentially leading to catastrophic [consequences for employees](#).

H₂S is highly lethal; even brief exposure to high concentrations can cause immediate collapse and death. Survivors of high-dose exposure often [suffer](#) from permanent neurological symptoms, including memory loss and impaired motor function. It behaves [similarly](#) to cyanide. It binds to iron in the mitochondrial cytochrome enzymes, effectively suffocating the body at a cellular level ([NCBI](#)).

Long-term exposure to low levels of H₂S can cause chronic bronchitis, skin discoloration (sulfhemoglobinemia), persistent [respiratory](#) symptoms such as cough and chest tightness, obstructive and restrictive [pulmonary disease](#), and asthma ([NCBI](#)).

Due to their higher metabolic rate and oxygen demand, children succumb more quickly to the cellular suffocation caused by H₂S. Furthermore, since H₂S is denser than air, a child standing in a low-lying area may breathe a lethal dose ([NCBI](#)).