

Hydrogen sulfide H₂S

1. General characterization

Hydrogen sulfide (H₂S) or sulfhydic acid is a colorless gas, with unpleasant smell of rotten eggs (perceptible starting from a concentration of 0.13 ppm); it is toxic, water-soluble and perceptible in small quantities and low concentrations.

2. Air pollutant effects on human health

- it is a poison for cells and enzymes and may cause irreversible changes in nervous systems.
- at high concentrations of hydrogen sulfide, death occurs from rapid paralysis of respiratory center.
- at low concentrations, hydrogen sulfide causes conjunctivitis, secretion of tears, irritation of respiratory passageways, pulmonary edema, heart muscle injury, mental changes, loss of balance, nerve paralysis, spasm, unconsciousness, circulatory collapse.
- common symptoms are metallic taste, fatigue, diarrhea, darkening of vision, intense eye pain, insomnia and dizziness.

3. Air pollutant effects on ecosystems

- hydrogen sulfide is an irritant gas and a chemical asphyxiant with effects on the central nervous system. Its effects on animals may vary depending on the level and duration of exposure;
- presence of hydrogen sulfide on the bottom of the Black Sea at a depth greater than 200 meters inhibits any form of marine life.

4. **Limit values** agreed between Romania and Bulgaria for the border area, for being used within a transboundary context

Hydrogen sulfide H ₂ S	Limit value averaged over 1h	5 µg/m ³
	Limit value averaged over 24h	3 µg/m ³