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Chemical interferences specifications

The SulfiLogger™ H₂S sensor's total sensor signal (the sensor reading) is the H₂S signal + interferences.

Gas	Formula	Interference for gases in gas phase (%) ¹	Interference for gases in liquid phase (%) ²
Methane	CH ₄	0	0
Carbon dioxide	CO ₂	0	0
Nitrogen	N ₂	0	0
Oxygen	O ₂	0	0
Air	O ₂ , N ₂ , Ar	0	0

Gas	Formula	Interference for gases in gas phase (%) ¹	Interference for gases in liquid phase (%) ²
Nitrous oxide	N ₂ O	0	0
Ammonia	NH ₃	0	0
Hydrogen	H ₂	0.8	96
Carbon monoxide	CO	0.6	77
Dimethyl sulfide	(CH ₃) ₂ S	18	18
Methyl mercaptan	CH ₃ SH	174	44

¹ Given as signal for the interfering species in % of H₂S signal at equal partial pressures

² Given as signal for the interfering species in % of H₂S signal at equal molar concentrations

Examples

The following examples clarify how to interpret the chemical interferences specifications table above.

Example #1

In a gas mixture with 1000 ppm hydrogen sulfide (H₂S) and 100 ppm hydrogen (H₂), the total sensor signal includes hydrogen induced interference corresponding to 0.8% of the 100 ppm H₂. In other words, there is a minor interference signal of 0.8 ppm.

Total sensor signal = H₂S signal + H₂

Example #2

In a gas mixture with 1000 ppm hydrogen sulfide (H₂S) and 100 ppm methyl mercaptan (CH₃SH), the interference is 174 ppm. Since mercaptans give rise to odor nuisances similar to H₂S and because the concentrations of mercaptans typically are much lower than the H₂S concentration it is seldom seen as a problem to have interference from these

interference signal = $1000 \text{ ppm} + (0.008 \times 100)$
= 1000.8 ppm.

molecules.

Total sensor signal = H_2S signal + CH_3SH

interference signal = $1000 \text{ ppm} + (0.174 \times 100)$
= 1174 ppm.

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