

ProPS Application Note

HS-/Total Dissolved Sulphide Amount (TDSA)

The possibilities of the single substance analysis with the **ProPS** have been extended in a common development cooperation between **TriOS Optical Sensors** and **AMT Analysentechnik GmbH**. Now the ProPS is also available for the spectral determination of the Hydrogen Sulphide Ion and for the Total Dissolved Sulphide Amount (TDSA) in combination with a pH-measurement.

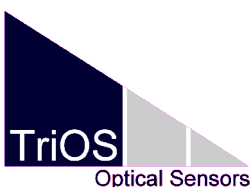
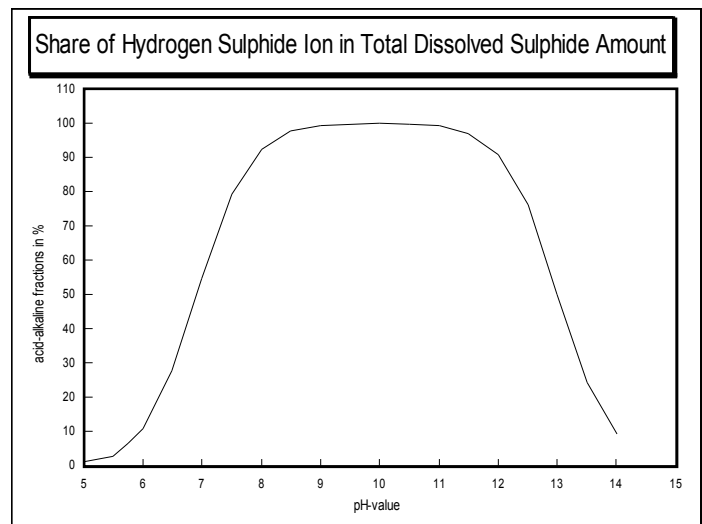


The ProPS allows the direct spectral determination of the Hydrogen Sulphide Ion at a wavelength of 230.5 nm. Therefore it is possible to determine the TDSA and the Hydrogen Sulphide Ion concentration *in-situ*, *on-line*, but also in laboratories.

Applications:

- Marine Chemistry (shallow water, deep sea)
- Waste Water Monitoring
- Biology, Geology
- Profiling
- Process Control

The ProPS is sensitive for the **Hydrogen Sulphide Ion** only, not for dissolved H_2S and Sulphide Ions. Therefore the TDSA determination with the ProPS is possible within a pH-range of 6.5 to 13.5 in combination with a pH sensor. The best working range is between pH 7.5 and 12 as shown in the figure opposite. This allows accurate *in-situ* and *on-line* measurements in sea water and natural lakes, but also in the process control in several industrial branches.



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Accessories:

Depending on the application several equipment accessories are available on request. The ProPS can be used as additionally sensor for interfacing to existing CTD probe systems or as single probe for the determination of the TDSA. For this purpose several additional sensors are offered (C, T, D, pH,...). Generally, the ProPS needs a **power supply**, **cable**, **software** and a **display** and **control unit**.

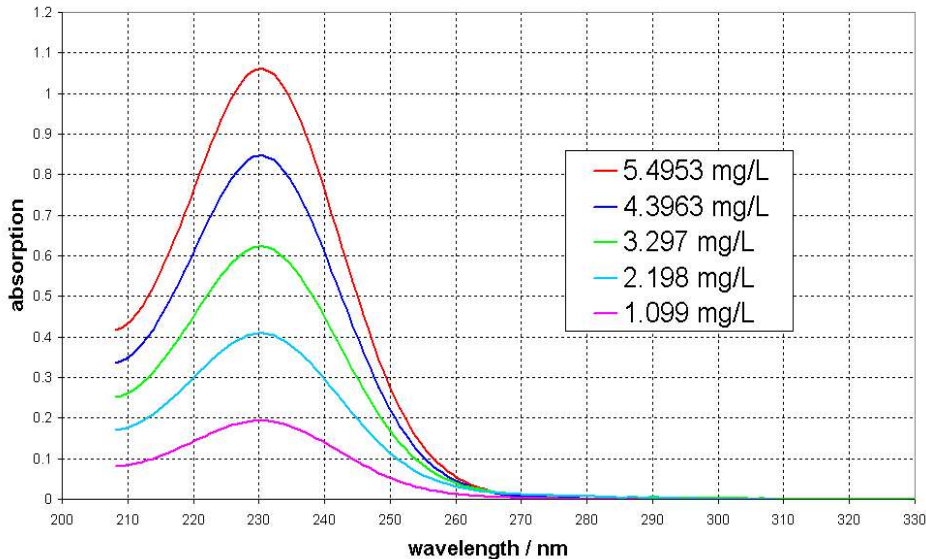


Fig.: Absorption spectra for different Hydrogen Sulphide concentrations at pH=7,55

Features and Technical Specifications

ProPS	Detector	
	Wavelength range	200-385 nm
	Spectral accuracy	0.2 nm
	Light Source	
	Type	Deuterium Lamp 5 Watt
	Life Time	250,000 single measurements
	Electrical	
	Data interface	RS-232, SUBCONN Micro 5 pin male
	Power requirements	9...36 V DC
	Physical	
	Path length	Min.: 0.1 cm; Max.: 6 cm
	Housing	Stainless Steel or Titanium
	Size	Diameter: 6.8 cm; Length: 52 cm
	Temperature Range	0-40°C
Depth range	6,000 m	
Hydrogen Sulphide Ion	pH range	6.5...13.5
	Absorbance Maximum HS ⁻	230.5 nm
	Concentration range HS ⁻	1 µg/l ...10 mg/l (6 cm cuvette) 75 µg/l...62 mg/l (0.1 cm cuvette)
	Concentration range TDSA	Depends on pH
	Temperature dependence	No
	Signal Interferences	No interferences observed for Sulphate, Sulphite, Dithionite, Hydrogen Sulphate, Chloride, Bromide