



AMT Analysenmesstechnik GmbH

Joachim-Jungius-Strasse 9

D-18059 Rostock, Germany

Phone: + 49 (0) 381 40 59 380

Fax: + 49 (0) 381 40 59 383

E-Mail: info@amt-gmbh.com

Web: www.amt-gmbh.com

Coulometric H₂S-/Sulphide-Generator G 200

A new microprocessor operating device with integrated degassing device for the stepless *on line* generation of H₂S-/Sulphide standard solutions

Accurate - high safety standard - comfortable - reliable - fast

Most of the analytical devices for the determination of H₂S-/Sulphide have to be calibrated. The usual calibration with standard solutions produced by step by step dilution of a stock solution is uncertain and problematic because of the high instability and reactivity of such solutions, especially at the ppb- and ppm-level.

These disadvantages may be avoided, if the standard solutions are generated electrochemically. So, the new coulometric H₂S-/Sulphide generator G 200 allows the stepless and dynamic *on line* production of standard solutions in a wide range from 31 nmol/l up to 6,21 mmol/l with very high accuracy and reproducibility at variable flow rates. A weight out of highly instable analyte substances (e.g. Na₂S) is not necessary no more. A check of the generated H₂S concentrations, for instance by a calibration free method such as the titrimetric method, isn't necessary too. Accidents in the laboratory caused by the production of highly concentrated stock solutions may be avoided, because only really needed small amounts of highly diluted H₂S standards are generated. Besides, the direct generation of H₂S standards produces more homogeneous solutions than the step by step dilution. Because in any case oxygen-free carrier solutions are needed, a special degassing unit is included in the new H₂S generator. Therefore a regular continuous degassing of the carrier solution is obtained. The large-scale degassing with inert gases can be cancelled. The running costs for gases like argon or nitrogen can be saved.



Technical data:

- ☞ concentration range: 31 nM... 6,2 mM
- ☞ up to 20 different concentrations/hour
- ☞ electrode capacity: approx. 350 mAh
- ☞ dimensions of the device (without pump):
 - length: 220 mm
 - breadth: 160 mm
 - height: 250 mm
- ☞ accuracy:
 - 99,78 % (amperometric sensor)
 - 97,51 % (methylene blue method)

Technical Data

Dimensions (LxWxH):	220 mm x160 mm x 250 mm (without peristaltic pump and bottle)
Power Supply:	230 V, 50 Hz, Power Supply unit
Flow Rate:	0,25 ... 5 ml/min
Concentration Range:	0,002 ... 60,0 mg/l H ₂ S resp. 0,062 ... 1871 µmol/l H ₂ S
Accuracy:	± 0,25 % (without consideration of the flow rate accuracy and when using oxygen and heavy metal free carrier solutions)
Efficiency of the O ₂ removing:	oxygen content after on-line degassing: < 35 µg/l
Start Phase:	1. degassing: approx. 45 minutes 2. first concentration: approx. 15-30 minutes (depends on working breaks, flow rates and concentration) Reduced start phase in case of parallel starting of 1. and 2. possible.
Time for concentration change:	depending on concentration jump and on flow rate
Concentration per hour:	up to 10
Repeatability:	99,78 % (with amperometric micro-sensor) 97,51% (with methylene blue method)
Capacity of the drying substance:	approx 4 working days (colour changes from blue to red)
Electrode capacity:	350 mAh (approx. 210 liter standard solution of 1 mg/l H ₂ S in case of a flow rate of 2 ml/min)
Carrier solution:	0,01 N H ₂ SO ₄ p.a. (use only pure water, triple distilled water)

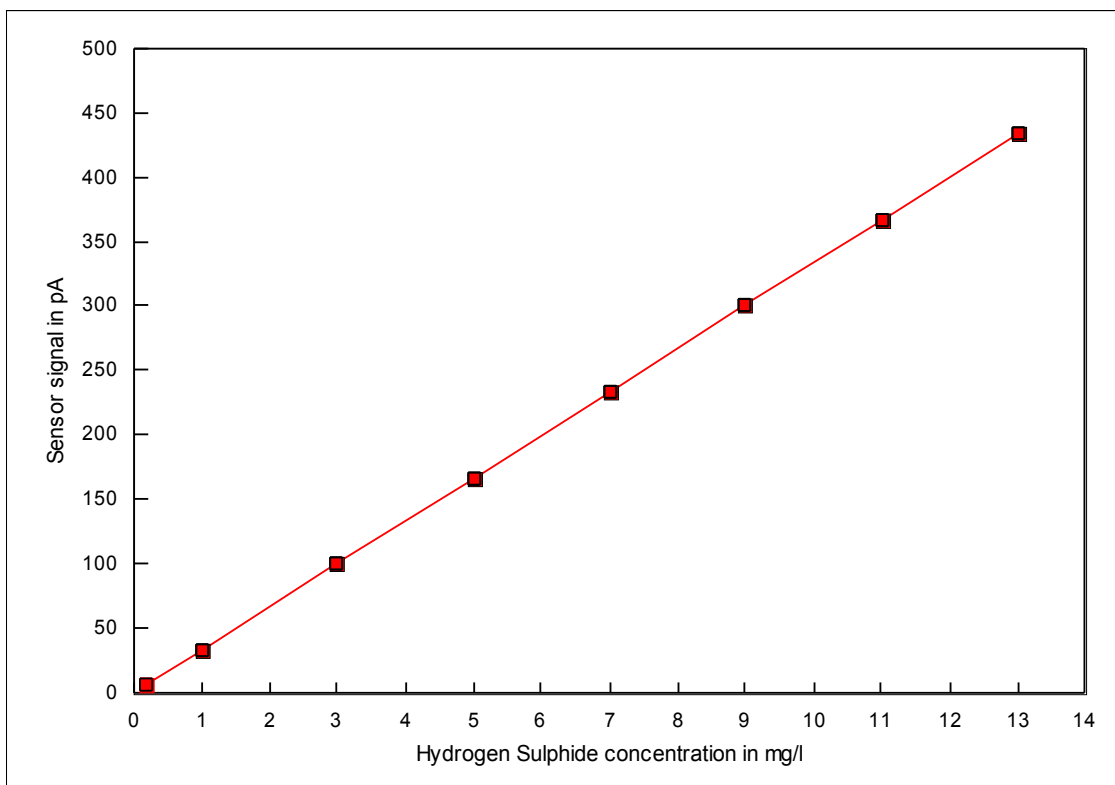


Figure: Generation of H₂S standard solutions in 0,01 N H₂SO₄ with the electrochemical H₂S generator G 200, determination with amperometric H₂S micro-sensor.