scTRACE Gold

Simple and reliable determination of arsenic in water

Metrohm

Highlights

- Sensor for voltammetric determination of arsenic
- Complete measurement system in one sensor (working, reference, and auxiliary electrode)
- Easy to use
- No conditioning required before use
- Inexpensive sensor allows regular replacement
- Maintenance-free
- Differentiates between arsenic(III) and arsenic(V)

Arsenic in water supplies

Arsenic occurs in small concentrations almost everywhere in the earth's crust. However, elevated levels of arsenic-containing minerals and ores are found in certain parts of the world as a result of specific geological conditions (volcanic rock, phosphate and sulfide mineral deposits). This arsenic leaches into the ground water in the form of arsenite (AsO_3^{3-}) and arsenate (AsO_4^{3-}), presenting a health risk to the local population. Industry and agriculture can also contribute to elevated arsenic concentrations in water. The WHO (World Health Organization) recommends that the arsenic content in drinking water should not exceed 10 µg/L. In many countries, including the USA and EU member states, this limit is not merely a recommendation but a legal requirement. Compliance with this limit value is usually monitored by spectroscopic techniques, which often involve very elaborate equipment.

Fast, easy, and reliable arsenic determination down to trace levels

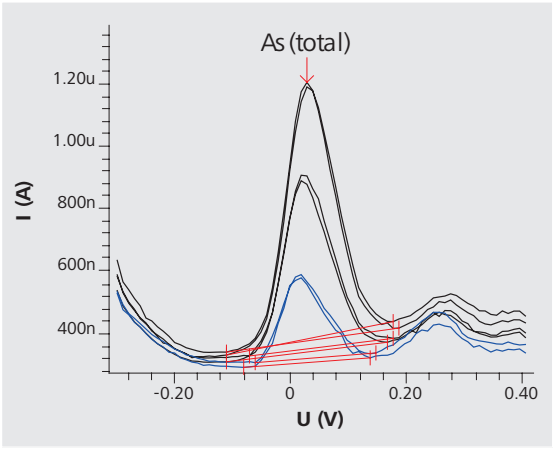
Voltammetry using the scTRACE Gold offers a simple, highly affordable alternative to the spectroscopic determination of arsenic. The electrode allows straightforward and reliable monitoring of the limit value for arsenic in drinking water of 10 µg/L. In fact, the detection limit with the scTRACE Gold is well below this concentration. The analysis time per sample is approximately 10 minutes only.

Using the scTRACE Gold could not be easier. The sensor combines all three of the electrodes needed for the measurement. To operate the scTRACE Gold, simply fit it on the electrode shaft, immerse it into the sample, and start the determination. The innovative gold microwire working electrode eliminates the need for the laborious preparation and conditioning of the electrode. As well as saving time, this also makes it easier to use the sensor, since it is no longer necessary to decide whether or not the electrode is ready for use. What's more, the screen-printed Ag/AgCl reference electrode is completely maintenance-free.

As with any electrode, the performance of the scTRACE Gold deteriorates as more and more determinations are performed. However, the practical plug-in design means that only the cost-efficient sensor has to be replaced, so regular replacement is not a problem. This ensures reliable results at all times. The electrode shaft can further be used.

Another advantage of voltammetric determination with the scTRACE Gold is the ability to differentiate between the more toxic As(III) and the less toxic As(V) simply through the choice of measuring parameters.

The scTRACE Gold can be used with any Metrohm voltammetry measuring stand.



β(As(total)) = 4.8 µg/L in mineral water with two standard additions

Technical specifications

Working electrode	Gold microwire
Reference electrode	Ag/AgCl
Auxiliary electrode	Carbon

Ordering information

6.1258.000 scTRACE Gold (pack of 4 electrodes)
6.1241.080 Electrode shaft for the scTRACE Gold

6.5340.000 scTRACE Gold equipment
comprised of:

6.1258.000	scTRACE Gold (pack of 4 electrodes)
6.1241.080	Electrode shaft for the scTRACE Gold
6.2753.210	Cap
6.1446.000	SGJ stopper B-14
6.1415.150	Measuring vessel, 5 mL
6.1204.200	Stirrer
6.1244.020	Drive belt

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