



Sulphate HR PP

M361

50 - 1000

Bariumsulphate Turbidity

## Instrument specific information

The test can be performed on the following devices. In addition, the required cuvette and the absorption range of the photometer are indicated.

| Instrument Type                                                      | Cuvette | $\lambda$ | Measuring Range |
|----------------------------------------------------------------------|---------|-----------|-----------------|
| MD 600, MD 610, MD 640, MultiDirect, SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 530 nm    | 50 - 1000       |

## Material

Required material (partly optional):

| Reagents          | Packaging Unit   | Part Number |
|-------------------|------------------|-------------|
| VARIO Sulfa 4 F10 | Powder / 100 pc. | 532160      |
| Deionised Water   | 100 mL           | 461275      |
| Deionised Water   | 250 mL           | 457022      |

The following accessories are required.

| Accessories                          | Packaging Unit | Part Number |
|--------------------------------------|----------------|-------------|
| Round cuvette 24 mm ø, set of 5      | 1 Set          | 197629      |
| Automatic pipette, 1-5 ml            | 1 pc.          | 419076      |
| Pipette tips, 1-5 ml (white) 100 pc. | 1 pc.          | 419066      |

## Application List

- Waste Water Treatment
- Cooling Water
- Drinking Water Treatment
- Raw Water Treatment

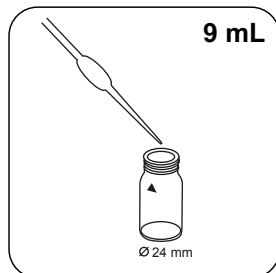




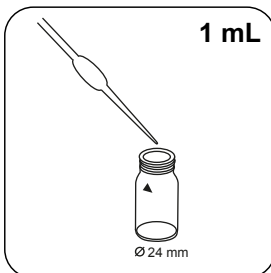
## Determination of Sulphate HR with powder packs

Select the method on the device.

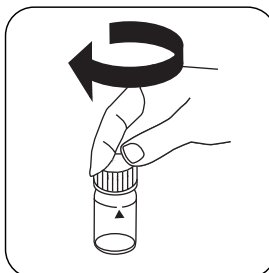
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



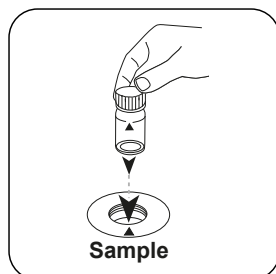
Fill 24 mm vial with **9 mL deionised water**.



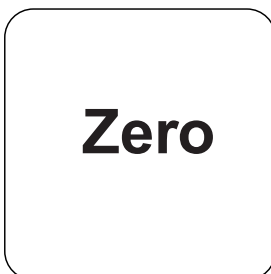
Put **1 mL sample** in the vial.



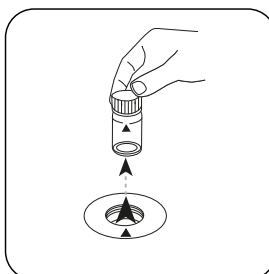
Close vial(s).



Place **sample vial** in the sample chamber. Pay attention to the positioning.

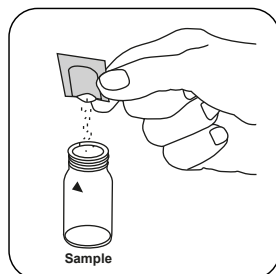


Press the **ZERO** button.

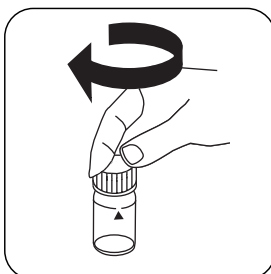


Remove the vial from the sample chamber.

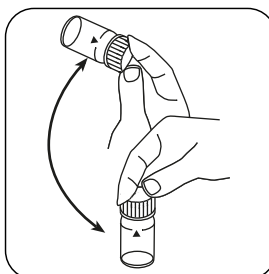
For devices that require **no ZERO measurement**, start here.



Add **Vario Sulpha 4/ F10 powder pack**.



Close vial(s).



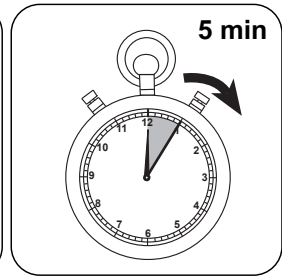
Invert several times to mix the contents.



Place **sample vial** in the sample chamber. Pay attention to the positioning.



Press the **TEST** (XD: **START**) button.



Wait for **5 minute(s) reaction time**.

Once the reaction period is finished, the measurement takes place automatically.

The result in mg/L Sulphate appears on the display.



## Chemical Method

Bariumsulphate Turbidity

### Calibration function for 3rd-party photometers

$$\text{Conc.} = a + b \cdot \text{Abs} + c \cdot \text{Abs}^2 + d \cdot \text{Abs}^3 + e \cdot \text{Abs}^4 + f \cdot \text{Abs}^5$$

|   | ∅ 24 mm                  | □ 10 mm                  |
|---|--------------------------|--------------------------|
| a | $2.42421 \cdot 10^{+1}$  | $2.42421 \cdot 10^{+1}$  |
| b | $1.07243 \cdot 10^{+3}$  | $2.30572 \cdot 10^{+3}$  |
| c | $-1.11466 \cdot 10^{+3}$ | $-5.15249 \cdot 10^{+3}$ |
| d | $7.93311 \cdot 10^{+2}$  | $7.88423 \cdot 10^{+3}$  |
| e | $-1.88194 \cdot 10^{+2}$ | $-4.02124 \cdot 10^{+3}$ |
| f |                          |                          |

### Method Validation

|                         |                |
|-------------------------|----------------|
| Limit of Detection      | 2.91 mg/L      |
| Limit of Quantification | 8.74 mg/L      |
| End of Measuring Range  | 1,000 mg/L     |
| Sensitivity             | 516 mg/L / Abs |
| Confidence Intervall    | 56.16 mg/L     |
| Standard Deviation      | 23.22 mg/L     |
| Variation Coefficient   | 4.42 %         |