Fluoride 2 L M172

0.1 - 2 mg/L F^- F

SPADNS

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	λ	Measuring Range
MD 600, MD 610, MD 640, MultiDirect, SpectroDirect, XD 7000, XD 7500	ø 24 mm	610 nm	0.1 - 2 mg/L F^-

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
SPADNS AF Reagent Solution 250 mL	250 mL	471341
SPADNS AF Reagent Solution 500 mL	500 mL	471342
SPADNS AF Reagent Solution 1000 mL	1000 mL	471343
ValidCheck Fluoride 0.3 mg/l	1 pc.	48321225
ValidCheck Fluoride 1 mg/l	1 pc.	48321325

The following accessories are required.

Accessories	Packaging Unit	Part Number
Sample cuvettes with lid, Height 95 mm, ø 24 mm, set of 6	1 Set	197646

Application List

- Drinking Water Treatment
- Raw Water Treatment

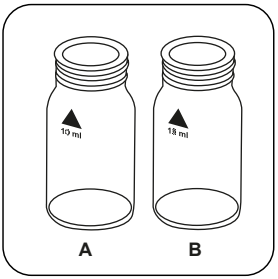
Preparation

1. The test result is highly dependent on exact sample and reagent volumes. Sample and reagent volumes should always be measured using a 10 ml or 2 ml volumetric pipette (class A).
2. For more accurate results it is recommended to perform a calibration with a fluoride standard each time the method is conducted.
3. Seawater and waste water samples must be distilled.
4. It is better practice to use special vials with a larger volume.

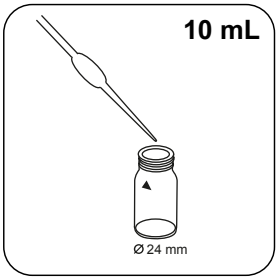
Determination of Fluoride with liquid reagent

Select the method on the device.

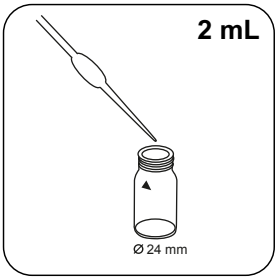
Pay attention to the notes!



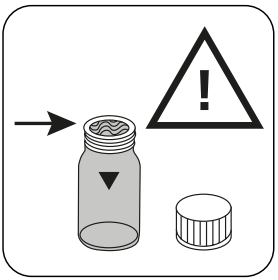
Prepare two clean 24 mm vials. Mark one as Blank and the other as Sample vial.



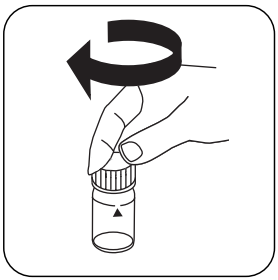
Add **exactly 10 mL deionised water** to the blank.



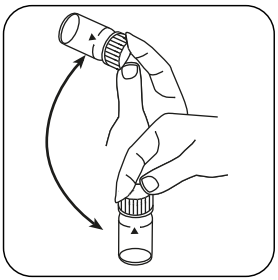
Add **exactly 2 mL SPADNS AF reagent solution reagent**.



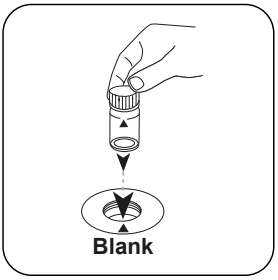
Note: Vial is filled to the top!



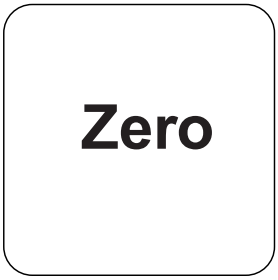
Close vial(s).



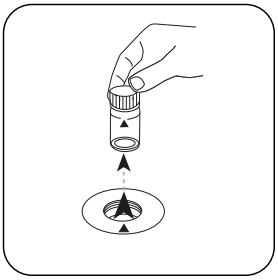
Invert several times to mix the contents.



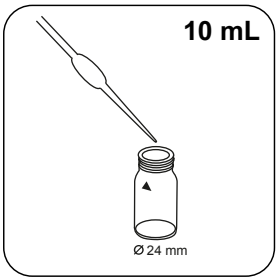
Place **blank** in the sample chamber. Pay attention to the positioning.



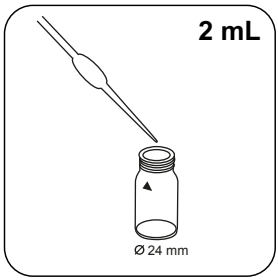
Press the **ZERO** button.



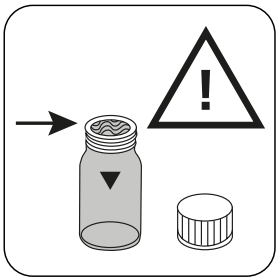
Remove the vial from the sample chamber.



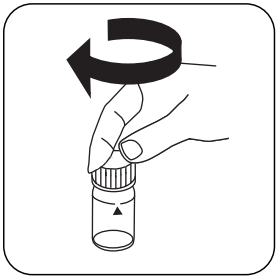
Put **exactly 10 mL sample** in the sample vial.



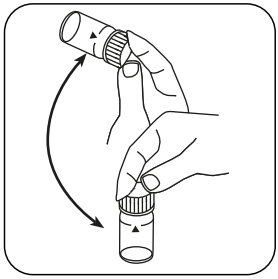
Add **exactly 2 mL SPADNS AF reagent solution** to the 24 mm vial.



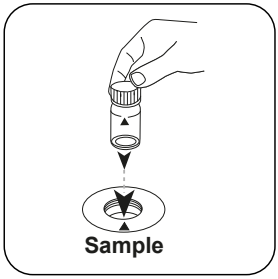
Note: Vial is filled to the top!



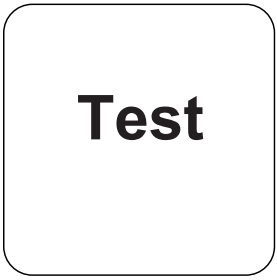
Close vial(s).



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.

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

Chemical Method

SPADNS

Appendix

Calibration function for 3rd-party photometers

Conc. = a + b•Abs + c•Abs^2 + d•Abs^3 + e•Abs^4 + f•Abs^5
Wavelength: 610 nm

	ø 24 mm	**□ 10 mm**
a	$0.0000 \cdot 10^{+0}$	$0,0000 \cdot 10^{+00}$
b	$-4.0375 \cdot 10^{+0}$	$-8,68063 \cdot 10^{+00}$
c	$-7.5618 \cdot 10^{+0}$	$-3,49544 \cdot 10^{+01}$
d	$-1.3250 \cdot 10^{+1}$	$-1,31683 \cdot 10^{+02}$
e		
f		

Interferences

Interference	**from / [mg/L]**
Cl_2	12

Method Validation

Limit of Detection	0.07 mg/L
Limit of Quantification	0.21 mg/L
End of Measuring Range	2.00 mg/L
Sensitivity	3.52 mg/L / Abs
Confidence Intervall	0.23 mg/L
Standard Deviation	0.04 mg/L
Variation Coefficient	3.84 %

Bibliography

Standard Methods 4500-F D