Polyacrylate L M338

1 - 30 mg/L Polyacryl POLY

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	λ	Measuring Range
MD 100, MD 110	ø 24 mm	530 nm	1 - 30 mg/L Polyacryl
MD 600, MD 610, MD 640, XD 7000, XD 7500	ø 24 mm	660 nm	1 - 30 mg/L Polyacryl

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Cartouche C18	1 pc.	56A020101
KS173-P2-2,4 Dinitrophenol Indicator	65 mL	56L017365
QAC Buffer QA2	65 mL	56L018365
Polyacrylate L Reagent Set	1 pc.	56R019165
KS336-Propan-2-ol, 65 mL	65 mL	56L033665

The following accessories are required.

Accessories	Packaging Unit	Part Number
Pipette, 1000 µl	1 pc.	365045
Pipette tips, 0,1-1 ml (blue), 1000 pc.	1 pc.	419073

Application List

- Cooling Water
- Boiler Water
- Raw Water Treatment

Preparation

- **Preparing the cartridge:**

1. Remove the plunger from a suitable syringe. Attach the C18 cartridge to the syringe cylinder.
2. Add 5 ml of KS336 (propane-2-ol) to the syringe cylinder.
3. Using the plunger, press the solvent by drop through the cartridge.
4. Remove the solvent that has passed through.
5. Remove the plunger again. Fill the syringe cylinder with 20 ml of deionised water.
6. With the help of the plunger, press the contents through the cartridge drop by drop.
7. Discard the deionised water that has flowed through.
8. The cartridge is now ready for use.

Notes

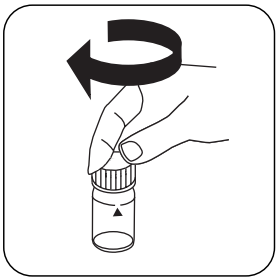
1. If little or no turbidity is present at correct dose concentrations, the sample will need a pre-concentration step in order to detect this level of polyacrylate/polymer.
2. Anomalous results occur when interferences are present as part of the sample components or from sample contaminants. In this case, the interference will need to be eliminated.
3. This test has been calibrated using polyacrylic acid 2'100 sodium salt in the range 1-30 mg/L. Other polyacrylates/polymers will give differing responses and therefore the test range will vary.

Determination of Polyacrylate with liquid reagent

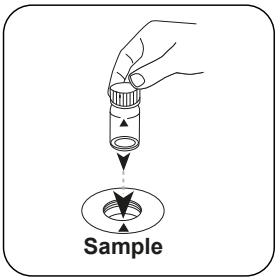
Select the method on the device.

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

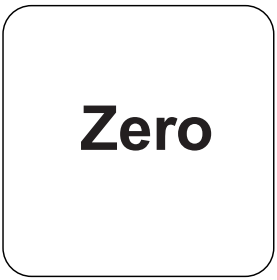
Fill 24 mm vial with **10 mL sample**.



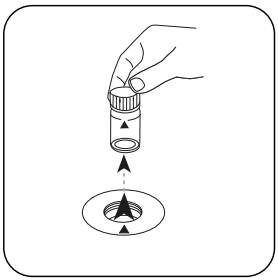
Close vial(s).



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

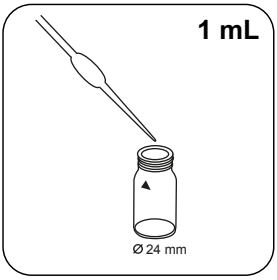


Press the **ZERO** button.

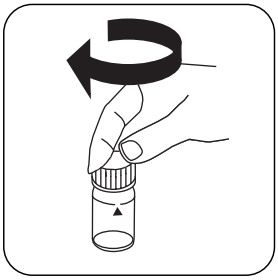


Remove the vial from the sample chamber.

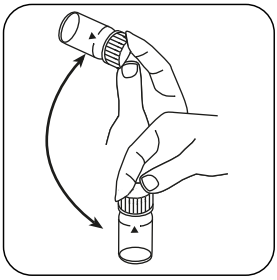
For devices that require **no ZERO measurement** , **start here**.



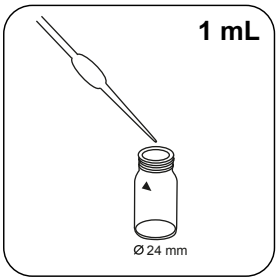
Place **1 mL (25 drops) Polyacrylate Buffer A1 solution** in the sample cuvette.



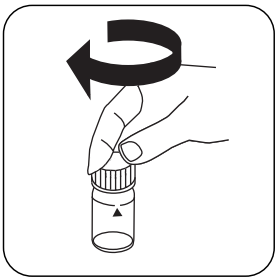
Close vial(s).



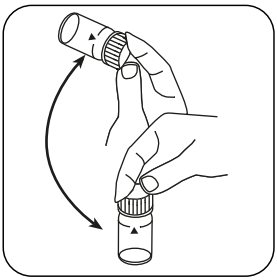
Invert several times to mix the contents.



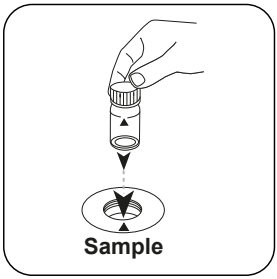
Place **1 mL (25 drops) Polyacrylate Precipitant A2 solution** in the sample cuvette.



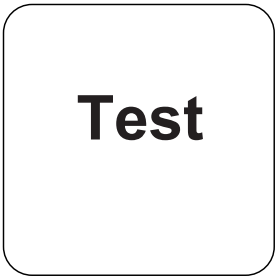
Close vial(s).



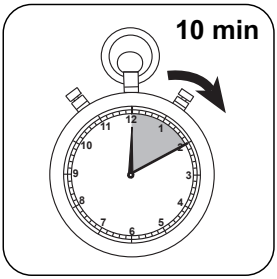
Invert several times to mix the contents.



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



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



Wait for **10 minute(s) reaction time**.

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

The result in mg/L Polyacryl acid 2100 sodium salt appears on the display.

Chemical Method

Turbidity

Appendix

Calibration function for 3rd-party photometers

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

	ø 24 mm	□ **10 mm**
a	5.21463 • 10^{-1}	5.21463 • 10^{-1}
b	3.45852 • 10^{+1}	7.43583 • 10^{+1}
c	-2.38855 • 10^{+1}	-1.10411 • 10^{+2}
d	1.52167 • 10^{+1}	1.51229 • 10^{+2}
e		
f		

Bibliography

W.B. Crummett, R.A. Hummel (1963), The Determination of Polyacrylamides in Water, American Water Works Association, 55 (2), pp. 209-219