**Hazen 24****M204****10 - 500 mg/L Pt****PtCo**

**(APHA) Platinum Cobalt Standard
Method**

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 600, MD 610, MD 640, MultiDirect	ø 24 mm	430 nm	10 - 500 mg/L Pt
XD 7000, XD 7500	ø 24 mm	455 nm	10 - 500 mg/L Pt

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
no reagent required		

Application List

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

Preparation

1. Sample collection, preservation and storage:
Pour the water sample into clean glass or plastic containers and analyse as soon as possible after the sample is taken. If this is not possible, fill the container right up to the top and seal tightly. Do not stir the sample and avoid lengthy contact with the air. The sample may be stored in a dark place at a temperature of 4 °C for 24 hours. Before carrying out any measurements, the water sample should be brought up to room temperature.

Notes

1. This colour scale was originally developed by A. Hazen as a visual comparison scale. It is therefore necessary to ascertain whether the extinction maximum of the water sample is in the range between 420 and 470 nm, as this method is only suitable for water samples with yellowish to yellowish-brown colouration. Where applicable, a decision should be made based on visual inspection of the water sample.
2. This method is

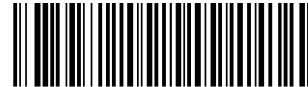


calibrated on the basis of the standards specified by "Standard Methods for the Examination of Water and Wastewater" (also see EN ISO 7887:1994).

Pt-Co colour unit $\wedge$ = 1 mg/L of platinum as chloroplatinate ion 3. Colour may be expressed as "true" or "apparent" colour. The apparent colour is defined as the colour of a solution due to dissolved substances and suspended particles in the sample.

This manual describes the determination of true colour by filtration of the water sample.

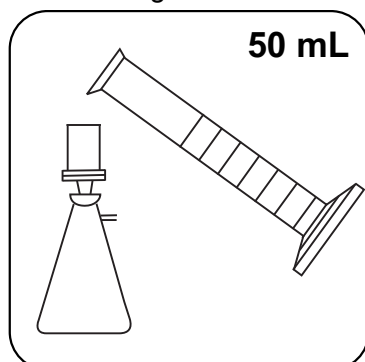
To determine the apparent colour, non-filtrated deionised water and sample are measured. 4. The estimated detection limit for this method is 15 mg/L Pt.



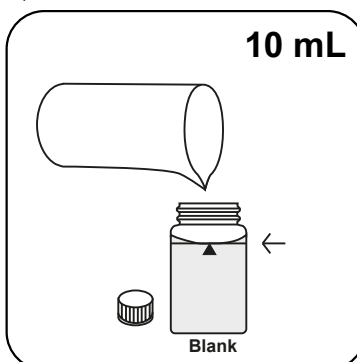
Determination of Colour, true and apparent

Select the method on the device.

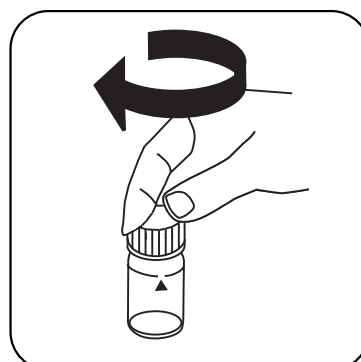
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



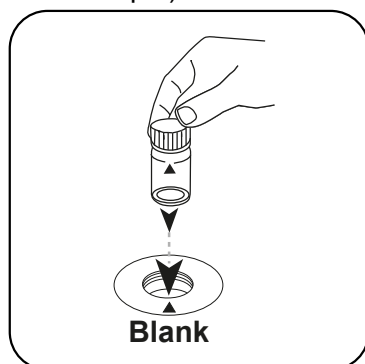
Filter approx. 50 mL sample with a pre-rinsed filter (pore size 0.45 µm).



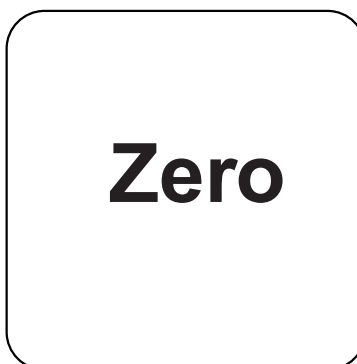
Put **10 mL deionised water** in the blank.



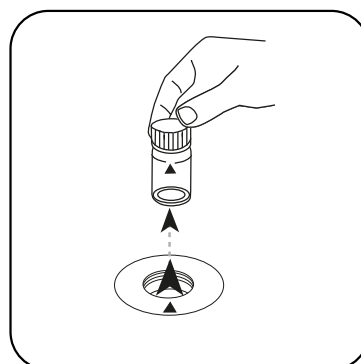
Close vial(s).



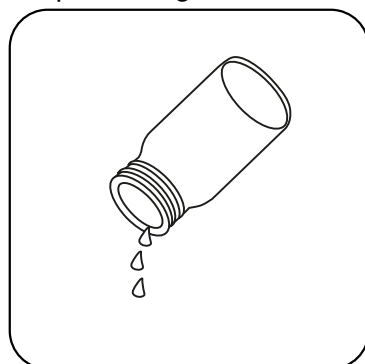
Place **blank** in the sample chamber. • Pay attention to the positioning.



Press the **ZERO** button.

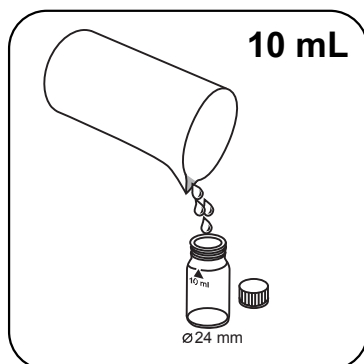


Remove the vial from the sample chamber.

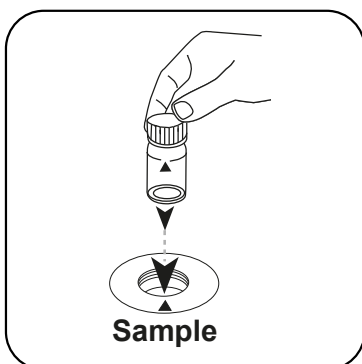


Empty vial.

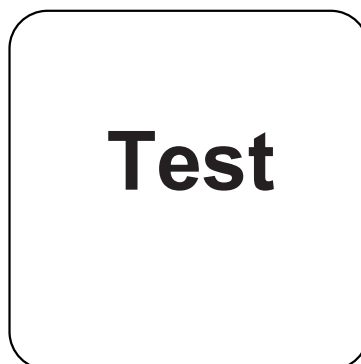
For devices that require **no ZERO measurement**, start here.



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

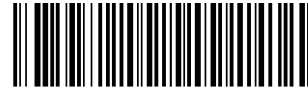


Place **sample vial** in the sample chamber. • Pay attention to the positioning.



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

The result in Pt-Co units appears on the display.



Chemical Method

(APHA) Platinum Cobalt Standard Method

Appendix

Calibration function for 3rd-party photometers

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

	ø 24 mm	□ 10 mm
a	$-8.76424 \cdot 10^{-2}$	$6.76451 \cdot 10^{+0}$
b	$1.71832 \cdot 10^{+3}$	$3.6463 \cdot 10^{+3}$
c		
d		
e		
f		

Method Validation

Limit of Detection	10.26 mg/L
Limit of Quantification	30.77 mg/L
End of Measuring Range	500 mg/L
Sensitivity	1,719.12 mg/L / Abs
Confidence Intervall	10.25 mg/L
Standard Deviation	4.24 mg/L
Variation Coefficient	1.6 %

According to

DIN 7887-C1
(WL 430, 455 nm;
Standard: 410 nm)