

Lovibond® Water Testing

Tintometer® Group



Manual of Methods

MD50

TSS

EN MD50 Photometer

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NL MD50 Fotometer

Zijde 40

RU Фотометр MD50

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DE MD50 Photometer

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FR MD50 Photomètre

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IT Fotometro MD50

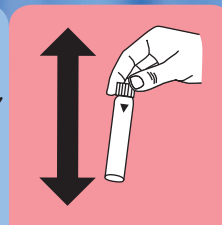
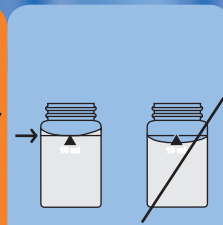
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TR MD50 fotometre

Sayfa 46

ZH MD50 光度计

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KS4.3 T / 20


Method name

Method number

Bar code for the detection of the methods

Measuring range

20

S:4.3

Chemical Method

Display in the MD 100 / MD 110 / MD 200

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 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l K _{S4.3} |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l K _{S4.3} |

Material

Required material (partly optional):

| Reagents | Packaging Unit | Part Number |
|-------------------|----------------|-------------|
| Alka-M-Photometer | Tablet / 100 | 513210BT |
| Alka-M-Photometer | Tablet / 250 | 513211BT |

Application List

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

Notes

1. The terms Alkalinity-m, m-Value, total alkalinity and Acid demand to K_{S4.3} are identical.
2. For accurate results, exactly 10 ml of water sample must be used for the test.

Language codes ISO 639-1

Revision status

EN Handbook of Methods 01/20

Performing test procedure

Implementation of the provision Acid capacity $K_{S_{4.3}}$ with Tablet

Select the method on the device

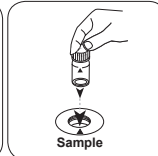
For this method, no ZERO measurements are to be carried out with the following devices: XD 7000, XD 7500



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

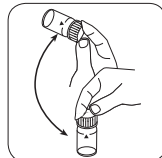


Close vial(s).

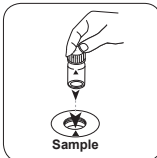


Place **sample vial** in the sample chamber. • Pay attention to the positioning.

• • •



Dissolve tablet(s) by inverting.

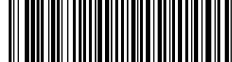


Place **sample vial** in the sample chamber. • Pay attention to the positioning.



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

The result in Acid Capacity $K_{S_{4.3}}$ appears on the display.



Suspended solids 24

M384

10 - 750 mg/L TSS

SuS

Turbidity / Attenuated Radiation Method

EN

Material

Required material (partly optional):

| Reagents | Packaging Unit | Part Number |
|---------------------|----------------|-------------|
| no reagent required | | |

Sampling

1. Measure the water sample as soon as possible after sampling. It is possible to store the sample at 4 °C for 7 days in plastic or glass containers. The measurement should be at the same temperature as the sample. Temperature differences between measurement and sampling can change the result of the measurement.

Notes

1. The photometric determination of Suspended Solids is based on a gravimetric method. In a laboratory this is usually done by evaporation of the filter residue of a filtrated water sample in a furnace at 103 °C – 105 °C and weighing of the dried residue.
2. When higher accuracy is required perform a gravimetric determination of a water sample. The result can be used to calibrate the photometer with the same water sample.
3. The estimated detection limit is 20 mg/L TSS.

Determination of Total suspended solids

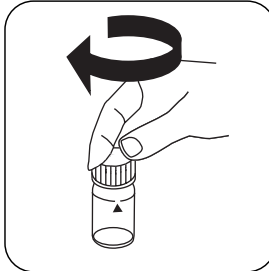
Select the method on the device.

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

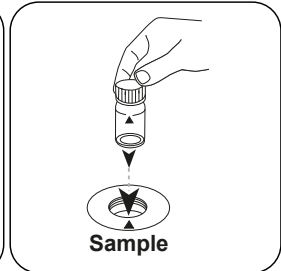
Homogenize mL of the water sample in a blender on high speed for minutes



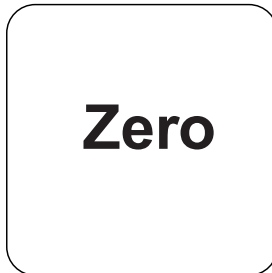
Fill 24 mm vial with **10 mL deionised water** .



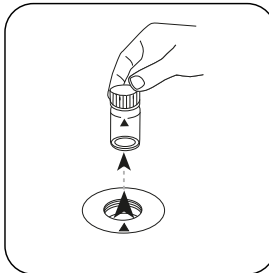
Close vial(s).



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

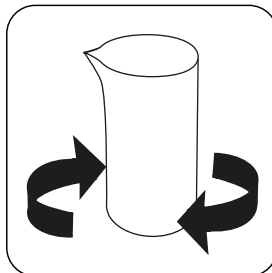


Press the **ZERO** button.

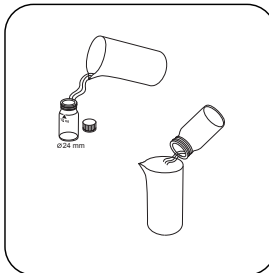


Remove the vial from the sample chamber.

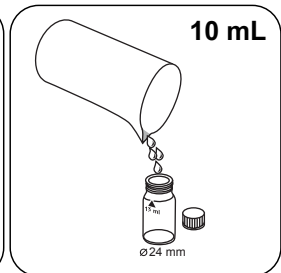
For devices that require **no ZERO measurement** , start here.



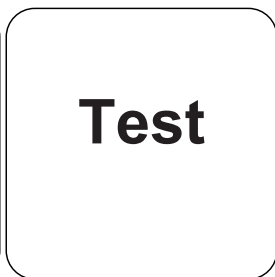
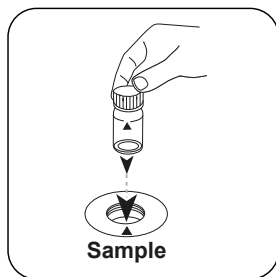
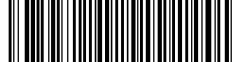
Mix homogenised water sample thoroughly.



Pre-rinse vial with water sample.



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



EN

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

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

The result in mg/L TSS (Total Suspended Solids) appears on the display.

Chemical Method

Turbidity / Attenuated Radiation Method

Appendix

Interferences

Persistent Interferences

- Colour interferes if light is absorbed at 660 nm.

Removeable Interferences


- Air bubbles interfere and can be removed by swirling the vial gently.

Method Validation

| | |
|--------------------------------|----------------|
| Limit of Detection | 10 mg/L |
| Limit of Quantification | 30 mg/L |
| End of Measuring Range | 750 mg/L |
| Sensitivity | 550 mg/L / Abs |
| Confidence Intervall | 4.24 mg/L |
| Standard Deviation | 1.79 mg/L |
| Variation Coefficient | 0.47 % |

Derived from

EN 872:2005

KS4.3 T / 20


Methoden Name

Methodennummer

Barcode zur Methodenerkennung

Messbereich

20

S:4.3

Chemische Methode

Säure / Indikator

Displayanzeige im MD 100 MD 110 / MD 200

Instrumentenspezifische Informationen

Der Test kann auf den folgenden Geräten durchgeführt werden. Zusätzlich sind die benötigte Küvette und der Absorptionsbereich der Photometer angegeben.

| Geräte | Küvette | λ | Messbereich |
|-------------------------------------------------------------|---------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0,1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0,1 - 4 mmol/l $K_{S4.3}$ |

Material

Benötigtes Material (zum Teil optional):

| Reagenzien | Form/Menge | Bestell-Nr. |
|-------------------|----------------|-------------|
| Alka-M-Photometer | Tablette / 100 | 513210BT |
| Alka-M-Photometer | Tablette / 250 | 513211BT |

Anwendungsbereich

- Abwasserbehandlung
- Trinkwasseraufbereitung
- Rohwasserbehandlung

Anmerkungen

1. Die Begriffe Alkalität-m, m-Wert, Gesamtalkalität und Säurekapazität $K_{S4.3}$ sind identisch.
2. Die exakte Einhaltung des Probevolumens von 10 ml ist für die Genauigkeit des Analyseergebnisses entscheidend.

Sprachkürzel nach ISO 639-1

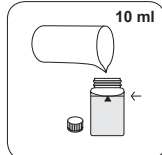
Revisionsstand

DE Methodenhandbuch 01/20

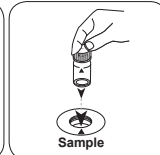
Durchführung der
Messung**Durchführung der Bestimmung Säurekapazität $K_{s4,3}$ mit Tablette**

Die Methode im Gerät auswählen.

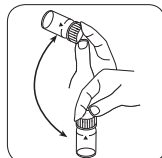
Für diese Methode muss bei folgenden Geräten keine ZERO-Messung durchgeführt werden: XD 7000, XD 7500

24-mm-Küvette mit **10 ml Probe** füllen.

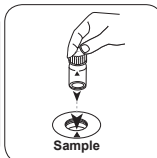
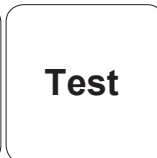
Küvette(n) verschließen.

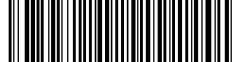
Die **Probenküvette** in den Messschacht stellen. Positionierung beachten.

• • •



Tablette(n) durch Umschwenken lösen.

Die **Probenküvette** in den Messschacht stellen. Positionierung beachten.Taste **TEST** (XD: **START**) drücken.In der Anzeige erscheint das Ergebnis als Säurekapazität $K_{s4,3}$.



Suspend. Feststoffe 24

M384

10 - 750 mg/L TSS

SuS

Trübung / Durchlicht

DE

Material

Benötigtes Material (zum Teil optional):

| Reagenzien | Form/Menge | Bestell-Nr. |
|---------------------------|------------|-------------|
| kein Reagenz erforderlich | | |

Probenahme

1. Die Wasserprobe so schnell wie möglich nach der Probenahme messen. Proben können bis zu 7 Tage bei 4 °C in Kunststoff- oder Glasflaschen aufbewahrt werden. Die Messung sollte bei derselben Temperatur erfolgen, wie bei Entnahme der Probe. Temperaturunterschiede zwischen Messung und Probenahme können das Messergebnis verändern.

Anmerkungen

1. Die photometrische Bestimmung der suspendierten Feststoffe basiert auf einer gravimetrischen Methode. In einem Labor wird das Eindampfen des Filterrückstandes einer abfiltrierten Wasserprobe gewöhnlich in einem Ofen bei 103 °C - 105 °C vorgenommen und der getrocknete Rückstand ausgewogen.
2. Wird eine erhöhte Genauigkeit benötigt, so ist eine gravimetrische Bestimmung einer Probe durchzuführen. Dieses Ergebnis kann für eine Anwender-Justierung des Photometers mit derselben Probe verwendet werden.
3. Die geschätzte Nachweisgrenze für diese Methode liegt bei 20 mg/L TSS.

Durchführung der Bestimmung Suspensierte Feststoffe

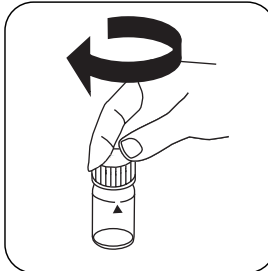
Die Methode im Gerät auswählen.

Für diese Methode muss bei folgenden Geräten nicht jedes mal eine ZERO-Messung durchgeführt werden: XD 7000, XD 7500

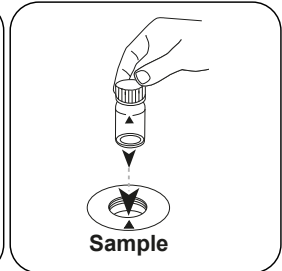
mL der Wasserprobe in einem Mixer auf hoher Stufe für Minuten homogenisieren.



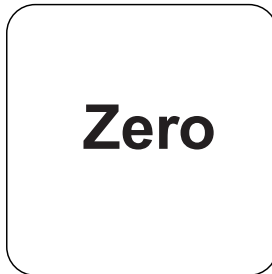
24 mm-Küvette mit **10 mL VE-Wasser** füllen.



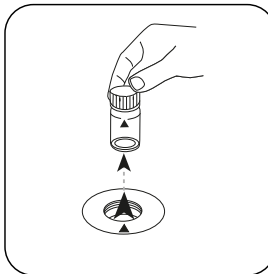
Küvette(n) verschließen.



Die **Probeküvette** in den Messschacht stellen. Positionierung beachten.

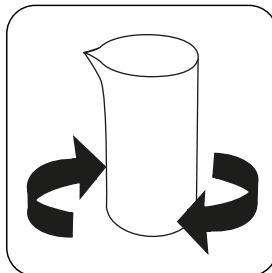


Taste **ZERO** drücken.

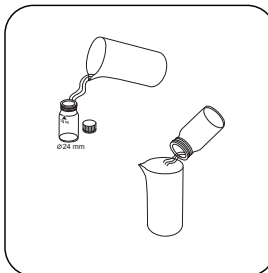


Küvette aus dem Messschacht nehmen.

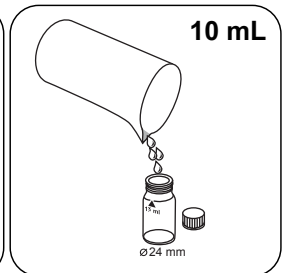
Bei Geräten, die **keine ZERO-Messung** erfordern, **hier beginnen**.



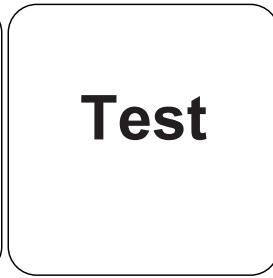
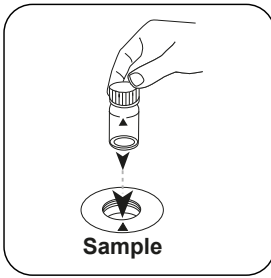
Homogenisierte Wasserprobe gut durchmischen.



Die Küvette mit der Wasserprobe vorspülen.



24-mm-Küvette mit **10 mL vorbereiteter Probe** füllen.



DE

Die **Probenküvette** in den Messschacht stellen. Positionierung beachten.

Taste **TEST** (XD: **START**) drücken.

In der Anzeige erscheint das Ergebnis in mg/L TSS (Total Suspended Solids).

Chemische Methode

Trübung / Durchlicht

Appendix

Störungen

Permanente Störungen

- Farbe stört, wenn Licht bei 660 nm absorbiert wird.

Ausschließbare Störungen

- Luftblasen stören und können durch leichtes Schwenken der Küvette entfernt werden.


Methodenvalidierung

| | |
|----------------------------------------|----------------|
| Nachweisgrenze | 10 mg/L |
| Bestimmungsgrenze | 30 mg/L |
| Messbereichsende | 750 mg/L |
| Empfindlichkeit | 550 mg/L / Abs |
| Vertrauensbereich | 4.24 mg/L |
| Verfahrensstandardabweichung | 1.79 mg/L |
| Verfahrensvariationskoeffizient | 0.47 % |

Abgeleitet von

EN 872:2005

KS4.3 T / 20



Nombre del método

Número de método

Código de barras para reconocer el método

Rango de medición

$K_{S4.3} T$
0.1 - 4 mmol/l $K_{S4.3}$
Ácido / Indicador

20
S:4.3

Método químico

Indicación en la pantalla de MD 100 / MD 110 / MD 200

Información específica del instrumento

La prueba puede realizarse en los siguientes dispositivos. Además, se muestran la cubeta requerida y el rango de absorción del fotómetro.

| Dispositivos | Cubeta | λ | Rango de medición |
|-------------------------------------------------------------|---------------------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | \varnothing 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | \varnothing 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |

Material

Material requerido (parcialmente opcional):

| Título | Unidad de embalaje | Referencia No |
|------------------|--------------------|---------------|
| Fotómetro alca-M | Tabletas / 100 | 513210BT |
| Fotómetro alca-M | Tabletas / 250 | 513211BT |

Lista de aplicaciones

- Tratamiento de aguas residuales
- Tratamiento de aguas potables
- Tratamiento de aguas de aporte

Notas

1. Las definiciones de alcalinidad-m, valor-m y capacidad ácida $K_{S4.3}$ son idénticas.
2. Añadir un volumen de muestra de exactamente 10 ml, ya que este volumen influye de forma decisiva en la exactitud del resultado.

Códigos de idioma ISO 639-1

Estado de revisión

ES Manual de Métodos 01/20

Realización de la determinación

Ejecución de la determinación Capacidad ácida $K_{a4.3}$ con tableta

Seleccionar el método en el aparato.

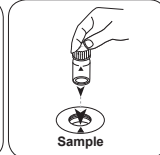
Para este método no es necesario realizar medición CERO en los aparatos siguientes: XD 7000, XD 7500



Llenar la cubeta de 24 mm con **10 ml de muestra**.

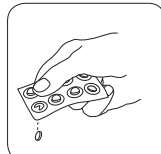


Cerrar la(s) cubeta(s).

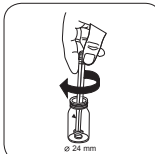


Poner la **cubeta de muestra** en el compartimiento de medición. ¡Debe tenerse en cuenta el posicionamiento!

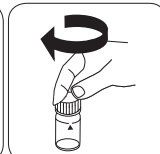
• • •



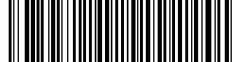
Añadir **tableta ALKA-M-PHOTOMETER**.



Triturar la(s) tableta(s) girando ligeramente.



Cerrar la(s) cubeta(s).



Sustancias sólidas suspend. 24

M384

10 - 750 mg/L TSS

SuS

**Turbidez / método de radiación
atenuada**

ES

Material

Material requerido (parcialmente opcional):

| Reactivos | Unidad de embalaje | No. de referencia |
|---------------------------|--------------------|-------------------|
| sin necesidad de reactivo | | |

Muestreo

1. Medir la muestra acuosa lo antes posible después de la toma de la muestra. Las muestras se pueden guardar hasta 7 días a 4 °C en botellas de plástico o de vidrio. La medición se deberá realizar a la misma temperatura a la que se ha tomado la muestra. Las diferencias de temperatura entre la medición y la toma de la muestra pueden modificar el resultado de la medición.

Notas

1. La determinación fotométrica de la sustancia sólida suspendida se basa en un método gravimétrico. En un laboratorio se lleva a cabo habitualmente la evaporación de los residuos del filtro de una muestra de agua filtrada en un horno a 103 °C - 105 °C y se pesa el residuo seco.
2. Si se necesita una exactitud mayor, se deberá realizar una determinación gravimétrica de una muestra. Este resultado puede ser utilizado con la misma muestra para un ajuste de usuario del fotómetro.
3. El límite de determinación calculado para este método es de aprox. 20 mg/L TSS.

Ejecución de la determinación Sustancias sólidas suspendidas

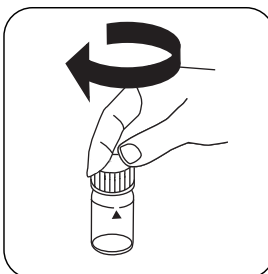
Seleccionar el método en el aparato.

Para este método, no es necesario realizar una medición CERO cada vez en los siguientes dispositivos: XD 7000, XD 7500

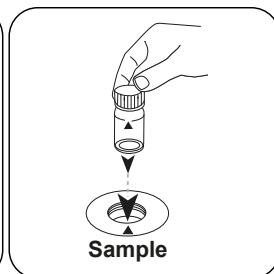
Homogeneizar mL de muestra de agua en un batidor, en la potencia más alta durante minutos.



Llenar la cubeta de 24 mm con **10 mL de agua desionizada**.



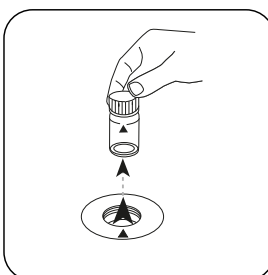
Cerrar la(s) cubeta(s).



Poner la **cubeta de muestra** en el compartimento de medición. ¡Debe tenerse en cuenta el posicionamiento!

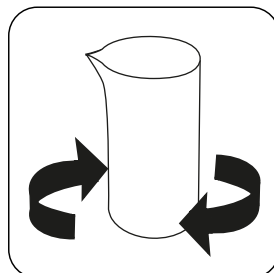


Pulsar la tecla **ZERO**.

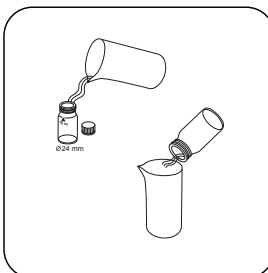


Extraer la cubeta del compartimento de medición.

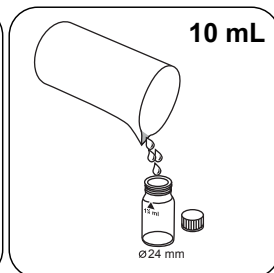
Para los aparatos que **no requieran medición CERO**, empezar aquí.



Mezclar bien la muestra acuosa homogeneizada.

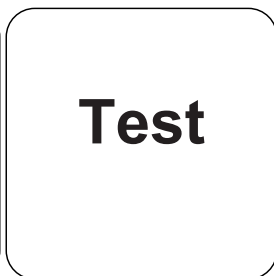
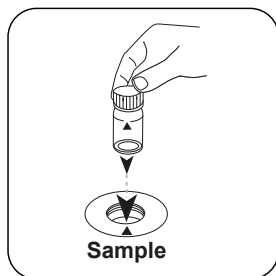
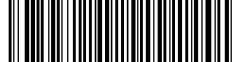


Prelavar la cubeta con la muestra acuosa.



Llenar la cubeta de 24 mm con **10 mL de la muestra preparada**.

ES



ES

Poner la **cubeta de muestra** en el compartimiento de medición. ¡Debe tenerse en cuenta el posicionamiento!

Pulsar la tecla **TEST** (XD: **START**).

A continuación se visualizará el resultado en mg/L TSS (Total Sólidos Disueltos).

Método químico

Turbidez / método de radiación atenuada

Apéndice

Interferencia

Interferencias persistentes

- Si la luz se absorbe a 660 nm se perturba el color.

Interferencias extraíbles

- Las burbujas de aire alteran y pueden ser eliminadas haciendo girar suavemente la cubeta.

Validación del método


| | |
|-------------------------------------|----------------|
| Límite de detección | 10 mg/L |
| Límite de determinación | 30 mg/L |
| Límite del rango de medición | 750 mg/L |
| Sensibilidad | 550 mg/L / Abs |
| Intervalo de confianza | 4.24 mg/L |
| Desviación estándar | 1.79 mg/L |
| Coefficiente de variación | 0.47 % |

Derivado de

EN 872:2005

ES

KS4.3 T / 20



Nom de la méthode → KS4.3 T

Numéro de méthode → 20

Code à barres pour reconnaître la méthode → [Barcode]

Plage de mesure → 0.1 - 4 mmol/l $K_{S4.3}$

Méthode chimique → Acide / Indicateur

Affichage dans le MD 100 / MD 110 / MD 200 → S:4.3

Informations spécifiques à l'instrument

Le test peut être effectué sur les appareils suivants. De plus, la cuvette requise et la plage d'absorption du photomètre sont indiquées.

| Appareils | Cuvette | λ | Gamme de mesure |
|-------------------------------------------------------------------|---------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |

Matériel

Matériel requis (partiellement optionnel):

| Titre | Pack contenant | Code |
|-------------------|-----------------|----------|
| Alka-M-Photometer | Pastilles / 100 | 513210BT |
| Alka-M-Photometer | Pastilles / 250 | 513211BT |

Liste d'applications

- Traitement des eaux usées
- Traitement de l'eau potable
- Traitement de l'eau brute

Indication

1. Les termes Alcalinité-m, Valeur m, Alcalinité totale et Capacité acide $K_{S4.3}$ sont identiques.
2. L'observation exacte du volume d'échantillon de 10 ml est décisive pour l'exactitude du résultat de l'analyse.

Codes de langue ISO 639-1 → FR

État de révision → 01/20

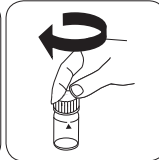
FR Méthodes Manuel 01/20

Procédure du test

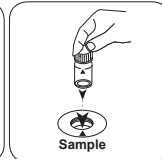
Réalisation de la quantification Capacité acide $K_{s4.3}$ avec pastille

Sélectionnez la méthode sur l'appareil.

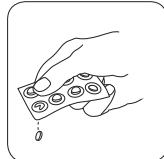
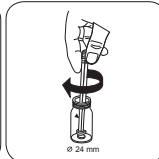
Cette méthode ne nécessite aucune mesure du zéro sur les appareils suivants : XD 7000, XD 7500

Remplissez une cuvette de 24 mm de **10 ml** d'échantillon.

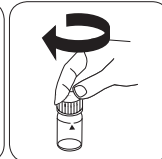
Fermez la(les) cuvette(s).

Placez la **cuvette réservée à l'échantillon** dans la chambre de mesure. Attention à la positionner correctement.

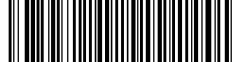
• • •

Ajoutez une **pastille de ALKA-M-PHOTOMETER**.

Écrasez la(les) pastille(s) en la(les) tournant un peu.



Fermez la(les) cuvette(s).



Solides en suspension 24

M384

10 - 750 mg/L TSS

SuS

Turbidité/méthode de radiation atténuée

FR

Matériel

Matériel requis (partiellement optionnel):

| Réactifs | Pack contenant | Code |
|----------------------------|----------------|------|
| Ne nécessite aucun réactif | | |

Échantillonnage

1. Mesurez l'échantillon d'eau le plus rapidement possible après le prélèvement. Les échantillons peuvent être conservés pendant 7 jours max. à une température de 4 °C dans des bouteilles en plastique ou en verre. La mesure devrait avoir lieu à la même température que celle du prélèvement de l'échantillon. Les différences de température entre la mesure et le prélèvement peuvent modifier le résultat.

Indication

1. La quantification photométrique des solides en suspension est basée sur une méthode gravimétrique. En laboratoire, l'évaporation du résidu de filtration d'un échantillon d'eau filtré a généralement lieu dans un four à 103 °C - 105 °C. Le résidu séché est alors pesé.
2. Si une exactitude supérieure est nécessaire, on procède à une quantification gravimétrique d'un échantillon. Ce résultat peut être utilisé pour ajuster le photomètre avec le même échantillon.
3. La limite de détection estimée pour cette méthode est de 20 mg/L TSS.

Réalisation de la quantification Solides en suspension

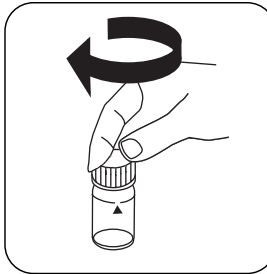
Sélectionnez la méthode sur l'appareil.

Pour cette méthode, il n'est pas nécessaire d'effectuer une mesure ZERO à chaque fois sur les appareils suivants : XD 7000, XD 7500

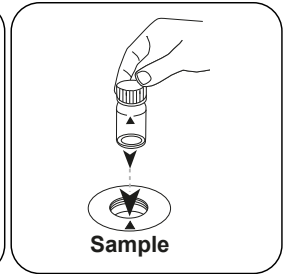
Homogénéisez mL de l'échantillon d'eau dans un agitateur, à grande vitesse et pendant minutes.



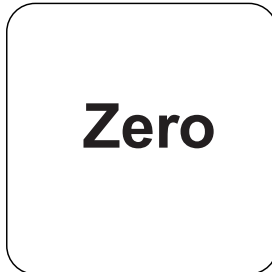
Remplissez une cuvette de 24 mm de **10 mL d'eau déminéralisée**.



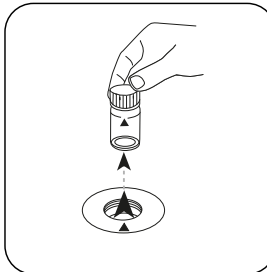
Fermez la(les) cuvette(s).



Placez la **cuvette réservée à l'échantillon** dans la chambre de mesure. Attention à la positionner correctement.

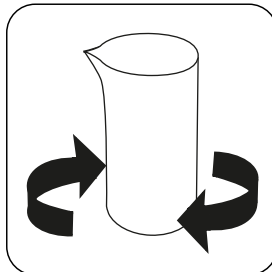


Appuyez sur la touche **ZERO**.

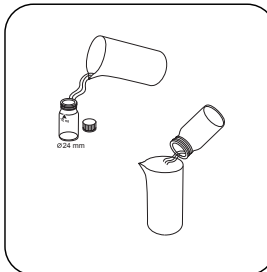


Retirez la cuvette de la chambre de mesure.

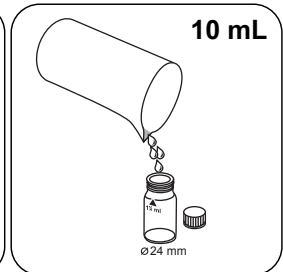
Sur les appareils ne nécessitant **aucune mesure ZÉRO**, commencez ici.



Mélangez correctement l'échantillon d'eau homogénéisée.

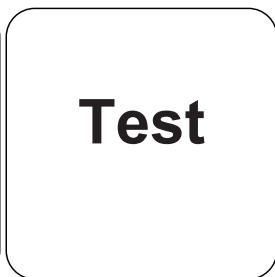
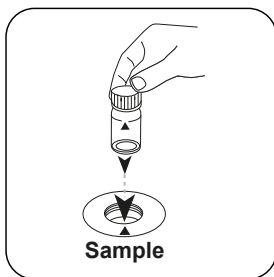
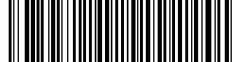


Prélevez la cuvette avec l'échantillon d'eau.



Remplissez une cuvette de 24 mm de **10 mL d'échantillon préparé**.

FR



FR

Placez la **cuvette réservée à l'échantillon** dans la chambre de mesure. Attention à la positionner correctement.

Appuyez sur la touche **TEST** (XD: **START**).

Le résultat s'affiche à l'écran en mg/L TSS (Matières en suspension totales).

Méthode chimique

Turbidité/méthode de radiation atténuée

Appendice

Interférences

Interférences persistantes

- La couleur perturbe si la lumière est absorbée à 660 nm.

Interférences exclues

- Les bulles d'air perturbent la mesure et sont éliminées en agitant légèrement la cuvette.


Méthode Validation

| | |
|----------------------------------|----------------|
| Limite de détection | 10 mg/L |
| Limite de détermination | 30 mg/L |
| Fin de la gamme de mesure | 750 mg/L |
| Sensibilité | 550 mg/L / Abs |
| Intervalle de confiance | 4.24 mg/L |
| Déviatoin standard | 1.79 mg/L |
| Coefficient de variation | 0.47 % |

Dérivé de

EN 872:2005

KS4.3 T / 20



Nome do método

Número do método

Código de barras para a detecção dos métodos

Área de medição

$K_{S_{4.3}} T$
0.1 - 4 mmol/l $K_{S_{4.3}}$
Ácido / Indicador

20
S:4.3

Indicado no display: MD 100 / MD 110 / MD 200

Método Químico

Informação específica do instrumento

O teste pode ser realizado nos seguintes dispositivos. Além disso, a cubeta necessária e a faixa de absorção do fotómetro são indicadas.

| Dispositivos | Cubeta | λ | Faixa de Medição |
|-------------------------------------------------------------------|---------|-----------|------------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |

Material

Material necessário (parcialmente opcional):

| Título | Unidade de Embalagem | Artigo No |
|-------------------|----------------------|-----------|
| Alka-M-Photometer | Pastilhas / 100 | 513210BT |
| Alka-M-Photometer | Pastilhas / 250 | 513211BT |

Lista de Aplicações

- Tratamento de Esgotos
- Tratamento de Água Potável
- Tratamento de Água Bruta

Notas

1. Os termos alcalinidade-m, m-valor, alcalinidade total e capacidade de acidez $K_{S_{4.3}}$ são idênticos.
2. O cumprimento exato do volume da amostra de 10 ml é decisivo para a precisão do resultado de análise.

Códigos de idioma ISO 639-1

Nível de revisão

PT Métodos Manual 01/20

Efetuar a medição

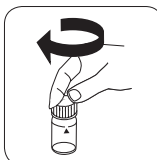
Realização da determinação Capacidade de acidez $K_{s4.3}$ com pastilha

Escolher o método no equipamento.

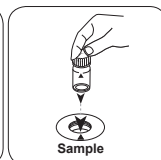
Para este método não tem de ser efetuada uma medição ZERO nos seguintes equipamentos: XD 7000, XD 7500



Encher a célula de 24 mm com 10 ml de amostra .

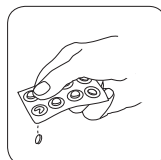


Fechar a(s) célula(s).

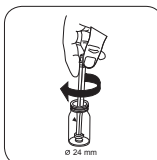


Colocar a **célula de amostra** no compartimento de medição. Observar o posicionamento.

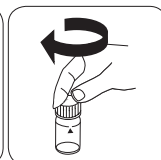
• • •



Pastilha ALKA-M-PHOTO-METER.



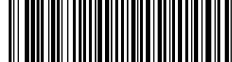
Esmagar a(s) pastilha(s) rodando ligeiramente.



Fechar a(s) célula(s).

PT Métodos Manual 01/20

PT



Matéria sólida suspensa 24

M384

10 - 750 mg/L TSS

SuS

**Turbidez / Método de Radiação
Atenuada**

PT

Material

Material necessário (parcialmente opcional):

| Reagentes | Unidade de Embalagem | Código do Produto |
|---------------------------|----------------------|-------------------|
| não é necessário reagente | | |

Amostragem

1. Medir a amostra de água logo após a recolha da amostra. As amostras podem ser guardadas até 7 dias a 4 °C em garrafas de plástico ou de vidro. A medição devia ser efetuada à mesma temperatura da recolha da amostra. As diferenças de temperatura entre a medição e a recolha da amostra podem alterar o resultado de medição.

Notas

1. A determinação fotométrica da matéria sólida suspensa baseia-se num método gravimétrico. Num laboratório procede-se à evaporação do resíduo de filtragem de uma amostra de água filtrada normalmente num forno a 103 °C - 105 °C, e o resíduo seco é equilibrado.
2. Se precisar de mais precisão, deve realizar uma determinação gravimétrica de uma amostra. Este resultado pode ser usado para um ajuste do utilizador do fotómetro com a mesma amostra.
3. O limite de prova estimado para este método situa-se em 20 mg/L TSS.

Realização da determinação Matéria sólida suspensa

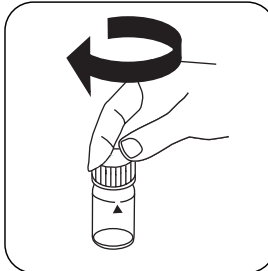
Escolher o método no equipamento.

Para este método, uma medição ZERO não precisa ser realizada todas as vezes nos seguintes dispositivos: XD 7000, XD 7500

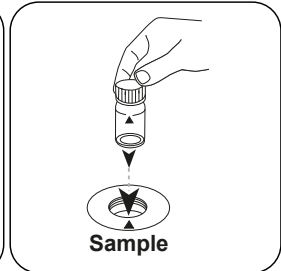
Homogeneizar mL da amostra de água num misturador a alto nível durante minutos.



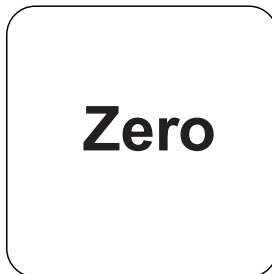
Encher a célula de 24 mm com **10 mL de água desmineralizada**.



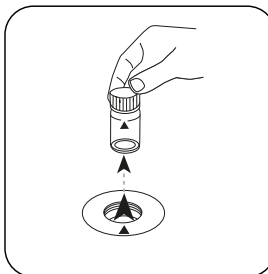
Fechar a(s) célula(s).



Colocar a **célula de amostra** no compartimento de medição. Observar o posicionamento.

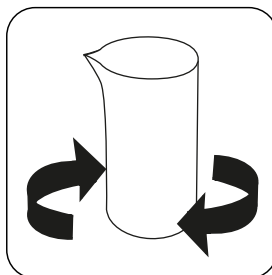


Premir a tecla **ZERO**.

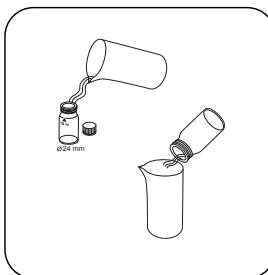


Retirar a célula do compartimento de medição.

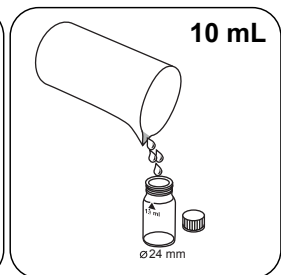
Nos equipamentos que **não requerem uma medição ZERO**, deve começar aqui.



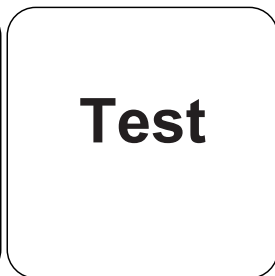
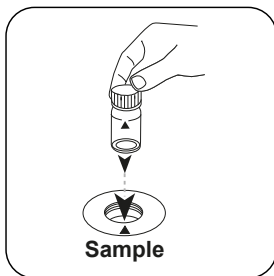
Misturar bem a amostra de água homogeneizada.



Pré-enzaguar a célula com a amostra de água.



Encher a célula de 24 mm com **10 mL de amostra preparada**.



PT

Colocar a **célula de amostra** no compartimento de medição. Observar o posicionamento.

Premir a tecla **TEST** (XD: **START**).

No visor aparece o resultado em mg/L TSS (Total de Sólidos Suspensos).



Método Químico

Turbidez / Método de Radiação Atenuada

Apêndice

Texto de Interferências

PT

Interferências Persistentes

- A cor interfere quando a luz é absorvida a 660 nm.

Interferências Removíveis

- As bolhas de ar interferem e podem ser removidas se agitar ligeiramente a célula.

Validação de método

| | |
|---------------------------------|----------------|
| Limite de Detecção | 10 mg/L |
| Limite de Determinação | 30 mg/L |
| Fim da Faixa de Medição | 750 mg/L |
| Sensibilidade | 550 mg/L / Abs |
| Faixa de Confiança | 4.24 mg/L |
| Desvio Padrão | 1.79 mg/L |
| Coefficiente de Variação | 0.47 % |

Derivado de

EN 872:2005

KS4.3 T / 20

Denominazione metodo

Numero metodo

Codice a barre per riconoscere il metodo

Range di misura

Indicazione sul display del MD 100 / MD 110 / MD 200

Metodo chimico

Informazioni specifiche dello strumento

Il test può essere eseguito sui seguenti dispositivi. Inoltre, sono indicate la cuvetta richiesta e il range di assorbimento del fotometro.

| Dispositivi | Cuvetta | λ | Campo di misura |
|-------------------------------------------------------------|---------|-----------|------------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |

Materiale

Materiale richiesto (in parte facoltativo):

| Titolo | Unità di imballaggio | N. ordine |
|-------------------|----------------------|-----------|
| Alka-M-Photometer | Pastiglia / 100 | 513210BT |
| Alka-M-Photometer | Pastiglia / 250 | 513211BT |

Campo di applicazione

- Trattamento acqua di scarico
- Trattamento acqua potabile
- Trattamento acqua non depurata

Note

1. I termini alcalinità M, valore M, alcalinità totale e capacità acida $K_{S_{4.3}}$ sono equivalenti.
2. Per l'accuratezza del risultato dell'analisi è fondamentale che il volume del campione misuri esattamente 10 ml.

ISO 639-1 codici linguistici

Stato di revisione

IT Manuale dei Metodi 01/20

**Svolgimento della
misurazione**

Esecuzione della rilevazione Capacità acida $K_{s4,3}$ con pastiglia

Selezionare il metodo nel dispositivo.

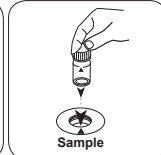
Con i seguenti dispositivi, per questo metodo non è necessario eseguire una misurazione ZERO: XD 7000, XD 7500



Riempire una cuvetta da 24 mm con **10 ml di campione**.

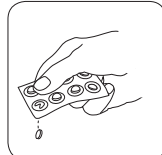


Chiudere la/e cuvetta/e.

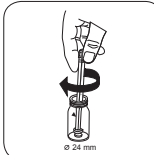


Posizionare la **cuvetta del campione** nel vano di misurazione. Fare attenzione al posizionamento.

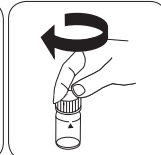
• • •



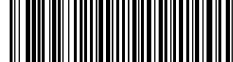
Aggiungere una **pastiglia ALKA-M-PHOTOMETER**.



Frantumare la/e pastiglia/e con una leggera rotazione.



Chiudere la/e cuvetta/e.


Solidi sospesi 24
M384
10 - 750 mg/L TSS
SuS
Torbidità / luce trasmessa

IT

Materiale

Materiale richiesto (in parte facoltativo):

| Reagenti | Unità di imballaggio | N. ordine |
|---------------------------|-------------------------|-----------|
| Nessun reagente richiesto | | |

Prelievo del campione

1. Il campione di acqua deve essere misurato al più presto dopo il prelievo. I campioni possono essere conservati fino a 7 giorni a 4 °C in flaconi di plastica o vetro. La misurazione dovrebbe avvenire alla stessa temperatura presente al momento del prelievo del campione. Eventuali differenze di temperatura tra la misurazione e il prelievo del campione possono modificare il risultato della misurazione.

Note

1. La determinazione fotometrica dei solidi sospesi è basata su un metodo gravimetrico. In un laboratorio la vaporizzazione del residuo di filtrazione di un campione di acqua filtrato viene solitamente eseguita in un forno a 103-105 °C e il residuo essiccato viene bilanciato.
2. Se è richiesta un'accuratezza elevata è necessario eseguire una determinazione gravimetrica di un campione. Questo risultato può essere utilizzato per una regolazione personalizzata del fotometro con lo stesso campione.
3. Il limite di rilevabilità stimato per questo metodo è di 20 mg/L di TSS.

Esecuzione della rilevazione Solidi sospesi

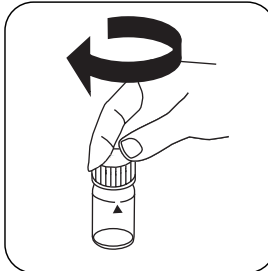
Selezionare il metodo nel dispositivo.

Per questo metodo, non è necessario eseguire una misurazione ZERO ogni volta sui seguenti dispositivi: XD 7000, XD 7500

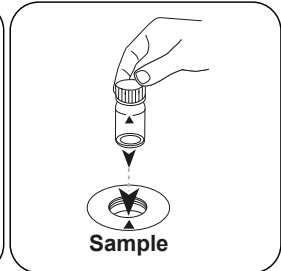
Omogeneizzare mL del campione di acqua in un agitatore a velocità elevata per minuti.



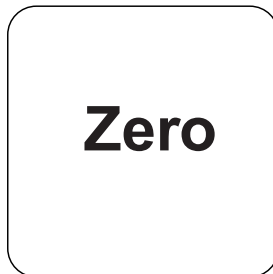
Riempire una cuvetta da 24 mm con **10 mL di acqua demineralizzata**.



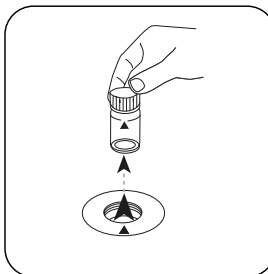
Chiudere la/e cuvetta/e.



Posizionare la **cuvetta del campione** nel vano di misurazione. Fare attenzione al posizionamento.

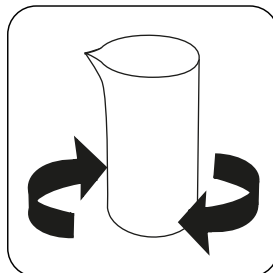


Premere il tasto **ZERO**.

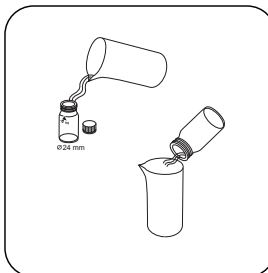


Prelevare la cuvetta dal vano di misurazione.

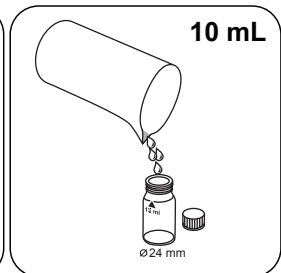
In caso di dispositivi che **non richiedono una misurazione ZERO**, iniziare da qui.



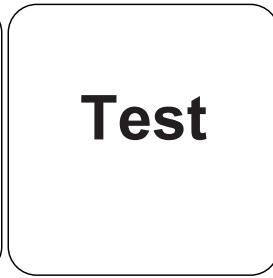
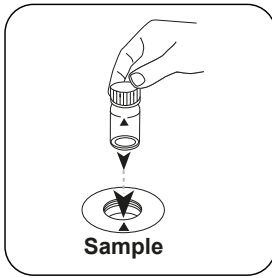
Miscelare bene il campione di acqua omogeneizzato.



Sciagquare preventivamente la cuvetta con il campione di acqua.



Riempire una cuvetta da 24 mm con **10 mL del campione preparato**.



IT

Posizionare la **cuvetta del campione** nel vano di misurazione. Fare attenzione al posizionamento.

Premere il tasto **TEST** (XD: **START**).

Sul display compare il risultato in mg/L di TSS (Totale solidi in sospensione).

Metodo chimico

Torbidità / luce trasmessa

Appendice

Interferenze

Interferenze permanenti

- Il colore provoca interferenze se la luce viene assorbita a 660 nm.

Interferenze escludibili

- Le bolle d'aria provocano interferenze e possono essere rimosse facendo oscillare leggermente la cuvetta.


Validazione metodo

| | |
|---------------------------------------------------|----------------|
| Limite di rilevabilità | 10 mg/L |
| Limite di quantificazione | 30 mg/L |
| Estremità campo di misura | 750 mg/L |
| Sensibilità | 550 mg/L / Abs |
| Intervallo di confidenza | 4.24 mg/L |
| Deviazione standard della procedura | 1.79 mg/L |
| Coefficiente di variazione della procedura | 0.47 % |

Derivato di

EN 872:2005

KS4.3 T / 20



Naam van de methode

Nummer methode

Streepjescode ter identificatie van de methode

Meetbereik

$K_{S_{4.3}} T$ M20
0.1 - 4 mmol/l $K_{S_{4.3}}$ S:4.3
Zuur / Indicator

Chemische methode

Uitlezing in MD
100 MD 110 / MD
200

Instrument specifieke informatie

De test kan op de volgende apparaten worden uitgevoerd. Bovendien worden de vereiste cuvette en het absorptiebereik van de fotometer aangegeven.

| Toestellen | Cuvet | λ | Meetbereik |
|-------------------------------------------------------------------|---------------------|-----------|------------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | \varnothing 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |
| SpectroDirect, XD 7000, XD 7500 | \varnothing 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S_{4.3}}$ |

Reagentia

Benodigd materiaal (deels optioneel):

| Titel | Verpakkingseenheid | Bestelnr. |
|-------------------|--------------------|-----------|
| Alka-M-Photometer | Tablet / 100 | 513210BT |
| Alka-M-Photometer | Tablet / 250 | 513211BT |

Toepassingsbereik

- Afvalwaterzuivering
- Behandeling drinkwater
- Zuivering vervuild water

Aantekeningen

1. De termen alkaliteit-m, m-waarde, totale alkaliteit en zuurcapaciteit_{S_{4.3}} zijn identiek.
2. De exacte naleving van het monstervolume van 10 ml is bepalend voor de nauwkeurigheid van het analysesresultaat.

Beknopte naam conform de norm ISO 639-1

Herziene versie

NL Handboek van Methoden 01/20

Uitvoering van de meting

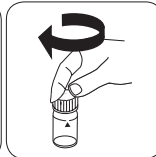
Uitvoering van de bepaling Zuurcapaciteit $K_{s4,3}$ met tablet

De methode in het apparaat selecteren.

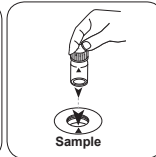
Voor deze methode moet bij de volgende apparaten geen nulmeting worden uitgevoerd:
XD 7000, XD 7500



Spoelbakje van 24 mm met **10 ml staal** vullen.

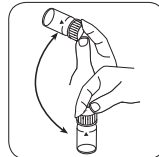


De spoelbakjes afsluiten.

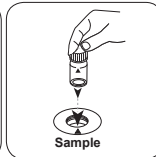


Het **staalspoelbakje** in de meetschacht plaatsen. Op de positionering letten.

• • •



Tabletten oplossen door om te draaien

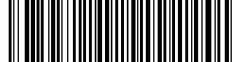


Het **staalspoelbakje** in de meetschacht plaatsen. Op de positionering letten.



De toets **TEST** (XD: **START**) indrukken.

De display toont het resultaat als Zuurcapaciteit $K_{s4,3}$.



Zwevende Vaste stoffen 24

M384

10 - 750 mg/L TSS

SuS

Troebelheid / doorvallend licht

NL

Reagentia

Benodigd materiaal (deels optioneel):

| Reagentia | Verpakkingseenheid | Bestelnr. |
|--------------------|--------------------|-----------|
| geen reagens nodig | | |

Bemonstering

1. Meet het watermonster zo spoedig mogelijk na de bemonstering. Monsters kunnen tot 7 dagen bij 4 °C worden bewaard in plastic of in glazen flessen. De meting moet worden uitgevoerd bij dezelfde temperatuur als toen het monster werd genomen. Temperatuurverschillen tussen meting en bemonstering kunnen het meetresultaat beïnvloeden.

Aantekeningen

1. De fotometrische bepaling van de zwevende vaste stoffen is gebaseerd op een gravimetrische methode. In een laboratorium wordt het filterresidu van een gefiltreerd watermonster meestal verdampt in een oven bij 103 - 105 °C en het gedroogde residu wordt gebalanceerd.
2. Indien een grotere nauwkeurigheid vereist is, moet een gravimetrische bepaling van een monster worden uitgevoerd. Dit resultaat kan worden gebruikt als gebruikersverantwoording van de fotometer met hetzelfde monster.
3. De geschatte aantoonbaarheidsgrens voor deze methode is 20 mg/L TSS.

Uitvoering van de bepaling Zwevende vaste stoffen

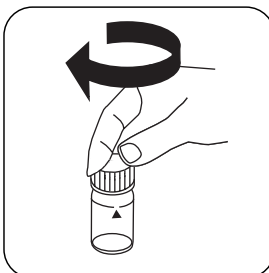
De methode in het apparaat selecteren.

Voor deze methode hoeft niet elke keer een nulmeting uitgevoerd te worden op de volgende apparaten: XD 7000, XD 7500

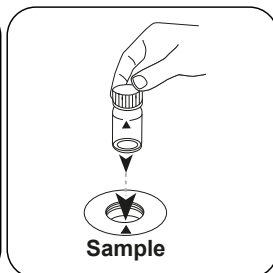
mL van het waterstaal gedurende minuten in een mixer op hoge stand homogeniseren.



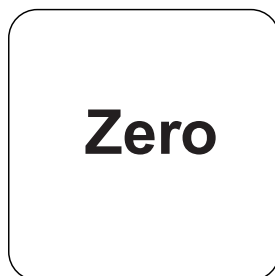
Spoelbakje van 24 mm met **10 mL gedeïoniseerd water** vullen.



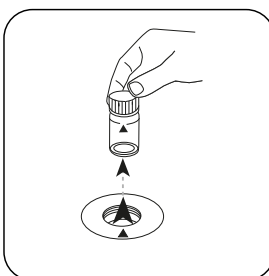
De spoelbakjes afsluiten.



Het **staal**spoelbakje in de meetschacht plaatsen. Op de positionering letten.

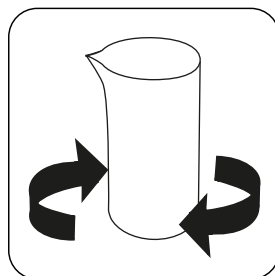


De toets **NUL** indrukken.

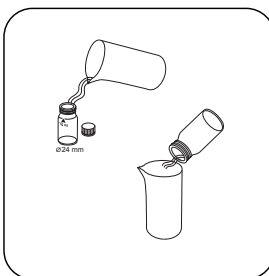


Het spoelbakje uit de meetschacht nemen.

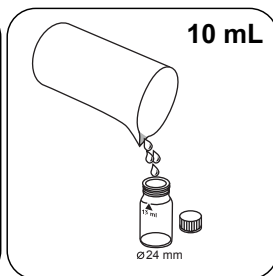
Bij apparaten die **geen nulmeting** vereisen, **hier beginnen**.



Het gehomogeniseerde waterstaal goed mengen.

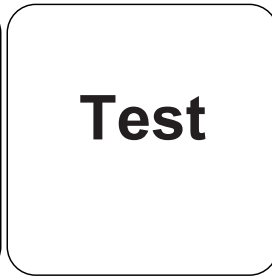
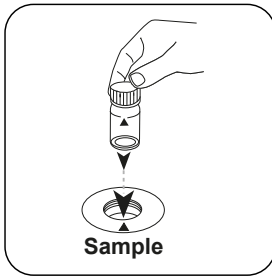


Het spoelbakje met het waterstaal voorspoelen.



Spoelbakje van 24 mm met **10 mL voorbereid staal** vullen.

NL



NL

Het **staalpoelbakje** in de meetschacht plaatsen. Op de positionering letten.

De toets **TEST** (XD: **START**) indrukken.

De display toont het resultaat in mg/L TSS (Total Suspended Solids).

Chemische methode

Troebelheid / doorvallend licht

Aanhangsel

Verstoringsen

Permanente verstoringen

- Kleur stoort wanneer licht wordt geabsorbeerd bij 660 nm.

Uit te sluiten verstoringen

- Luchtbellen interfereren en kunnen worden verwijderd door het spoelbakje een beetje te draaien.

Validatie van de methodes

| | |
|--------------------------------------|----------------|
| Aantoonbaarheidsgrens | 10 mg/L |
| Bepaalbaarheidsgrens | 30 mg/L |
| Einde meetbereik | 750 mg/L |
| Gevoeligheid | 550 mg/L / Abs |
| Betrouwbaarheidsgrenzen | 4.24 mg/L |
| Standaardafwijking procedure | 1.79 mg/L |
| Variatiecoefficient procedure | 0.47 % |

Afgeleid van

EN 872:2005

KS4.3 T / 20

Yöntem Adı

Yöntemleri numarası

Yöntemi tanımak için barkod

Ölçüm aralığı

Kimyasal Metod

$K_{S4.3} T$
0.1 - 4 mmol/l $K_{S4.3}$
Asit / Gösterge

20
S:4.3

Ekrandaki: MD 100 MD 110 / MD 200

Enstrümana özel bilgi

Test, aşağıdaki cihazlarda gerçekleştirilebilir. Ek olarak, gerekli küvet ve fotometrenin emilim aralığı belirtilmiştir.

| Cihazlar | Küvet | λ | Ölçüm Aralığı |
|-------------------------------------------------------------|---------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |

Malzeme

Gerekli materyal (kısmen isteğe bağlı):

| Başlık | Paketleme Birimi | Ürün No |
|-------------------|------------------|----------|
| Alka-M-Photometer | Tablet / 100 | 513210BT |
| Alka-M-Photometer | Tablet / 250 | 513211BT |

Uygulama Listesi

- Atık Su Arıtma
- İçme Suyu Arıtma
- Ham Su Arıtma

Notlar

1. Alkalite-m, m değeri, toplam alkalite ve asit kapasitesi $K_{S4.3}$ kavramları ayrıdır.
2. 10 ml'lik numune hacmine tam riayet edilmesi, analiz sonucunun doğruluğu bakımından önemlidir.

Dil kodları ISO 639-1

Revizyon durumu

TR Metotlar Kılavuzu 01/20

Testin uygulanması

Tespitin uygulanması Tabletli asit kapasitesi $K_{S4,3}$

Cihazda metot seçin.

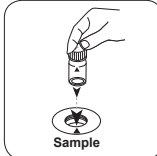
Bu metot için şu cihazlarda ZERO ölçümü yapılması gerekmez: XD 7000, XD 7500



24 mm'lik küveti **10 ml numune** ile doldurun.

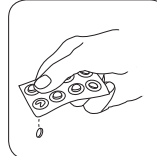


Küveti(küvetleri) kapatın.

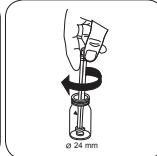


Numune küvetini ölçüm haznesine koyun. Doğru konumlandırılmasına dikkat edin.

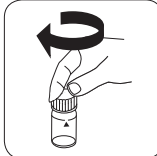
• • •



ALKA-M-PHOTOMETER tablet ilave edin.



Tableti(tabletleri) hafifçe döndürerek ezin.



Küveti(küvetleri) kapatın.

**Süspan. katı madde 24****M384****10 - 750 mg/L TSS****SuS****Bulanıklık/Zayıflatılmış Radyasyon
Metodu**

TR

Malzeme

Gerekli materyal (kısmen isteğe bağlı):

Ayırıklar**Paketleme
Birimi****Ürün No**

ayırık gerekmez

Numune Alma

1. Su numunesi, numune alındıktan sonra olabildiğince hızlı şekilde ölçülmelidir. Numuneler plastik veya cam şişelerde 7 güne kadar 4 °C'de muhafaza edilebilir. Ölçüm, numunenin alınmasında olduğu gibi aynı sıcaklıkta gerçekleştirilmelidir. Ölçüm ve numune alımı arasındaki sıcaklık farkları ölçüm sonucunu değiştirebilir.

Notlar

1. Süspanse edilen katı maddenin fotometrik tespiti gravimetrik metodu baz alır. Bir laboratuvarında filtrelenen su numunesinin filtre kalıntısının buharlaşması genellikle 103 °C - 105 °C'de bir fırında yapılır ve kuru kalıntı atılır.
2. Yüksek doğruluk gerekiyorsa numunenin gravimetrik tespiti yapılmalıdır. Bu sonuç fotometrenin kullanıcı ayarı için aynı numune ile kullanılabilir.
3. Bu metod için tahmini ispat sınırı 20 mg/L TSS'dir.

Tespitin uygulanması Süspanse edilen katı madde

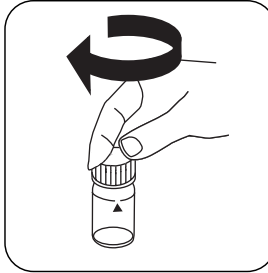
Cihazda metot seçin.

Bu yöntem için, aşağıdaki cihazlarda her seferinde SIFIR ölçümünün yapılması gerekmez: XD 7000, XD 7500

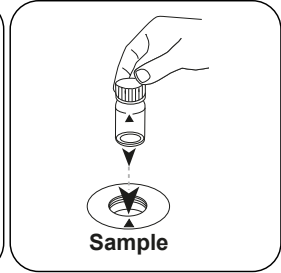
Su numunesinin mL'sini bir karıştırıcının en yüksek kademesinde dakika boyunca homojen hale getirin.



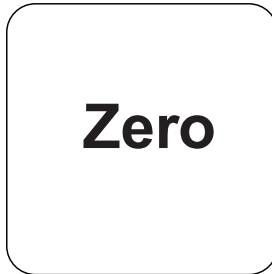
24 mm'lik küveti **10 mL demineralize su** ile doldurun.



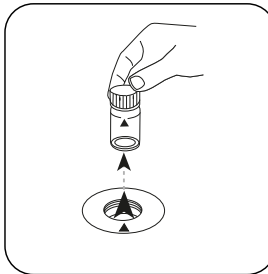
Küveti(küvetleri) kapatın.



Numune küvetini ölçüm haznesine koyun. Doğru konumlandırılmasına dikkat edin.

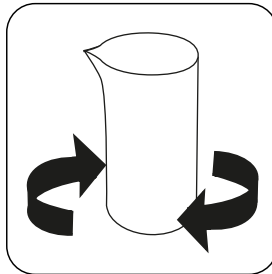


ZERO tuşuna basın.

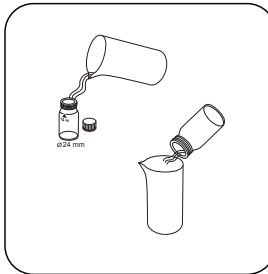


Küveti ölçüm haznesinden alın.

ZERO ölçümü gerektirmeyen cihazlarda buradan başlayın.



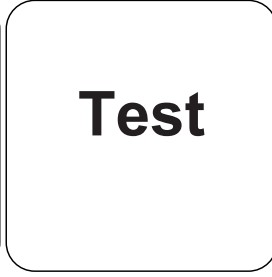
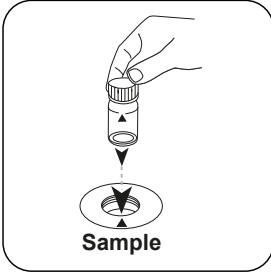
Homojen hale getirilmiş su numunesini iyice karıştırın.



Küvete su numunesi ile ön yıkama uygulayın.



24 mm'lik küveti **önceden hazırlanmış 10 mL numune** ile doldurun.



TR

Numune küvetini ölçüm haznesine koyun. Doğru konumlandırılmasına dikkat edin.

TEST (XD: START) tuşuna basın.

Ekranda sonuç mg/L TSS (Toplam Askıda Katı Maddeler) cinsinden belirir.

Kimyasal Metod

Bulanıklık/Zayıflatılmış Radyasyon Metodu

Apendis

Girişim Metni

Kalıcı Girişimler

- Işık 660 nm'de absorbe edildiğinde renk bozulma yapar.

Giderilebilir Girişimler

- Hava kabarcıkları bozma yapar ve bu kabarcıklar küvetin hafifçe sallanmasıyla giderilebilir.


Yöntem Doğrulama

| | |
|----------------------------|----------------|
| Algılama Limiti | 10 mg/L |
| Belirleme Limiti | 30 mg/L |
| Ölçüm Aralığı Sonu | 750 mg/L |
| Hassasiyet | 550 mg/L / Abs |
| Güven Aralığı | 4.24 mg/L |
| Standart Sapma | 1.79 mg/L |
| Varyasyon Katsayısı | 0.47 % |

Elde edilen

EN 872:2005

KS4.3 T / 20



Название метода → KS4.3 T

Номер метода → M20

Штрих-код для распознавания метода → [Barcode]

Диапазон измерений → 0.1 - 4 mmol/l $K_{S4.3}$

Химический метод → Кислота / индикатор

Отображение на дисплее в MD 100 MD 110 / MD 200 → S:4.3

Специфическая информация об инструменте

Тест может быть выполнен на следующих устройствах. Кроме того, указывается требуемая кювета и диапазон поглощения фотометра.

| Приборы | Кювета | λ | Диапазон измерений |
|-------------------------------------------------------------|---------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | ø 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | ø 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |

Материал

Необходимый материал (частично необязательный):

| Заголовок | Упаковочная единица | Номер заказа |
|-------------------|---------------------|--------------|
| Alka-M-Photometer | Таблетка / 100 | 513210BT |
| Alka-M-Photometer | Таблетка / 250 | 513211BT |

Область применения

- Обработка сточных вод
- Подготовка питьевой воды
- Обработка сырой воды

Примечания

1. Термины Щелочность M, m-значение, общая калийность и кислотная сила $K_{S4.3}$ идентичны.
2. Точное соблюдение объема пробы в 10 мл имеет решающее значение для точности результатов анализа.

Сокращенное обозначение языка в соответствии с ISO 639-1

Статус редакции

RU Методическое руководство 01/20

**Выполнение
измерения**
Выполнение определения Кислотная сила $K_{s4.3}$ с таблеткой

Выберите метод в устройстве.

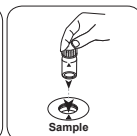
Для этого метода измерения нуля не требуется для следующих устройств: XD 7000, XD 7500



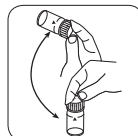
24-Наполните ковеву -мм
10 пробой мл.



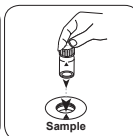
Закройте ковеву(ы).



Поместите ковеву для
проб в измерительную
шахту. Обращайте
внимание на
позиционирование.



Растворите таблетку
(таблетки) покачиванием.

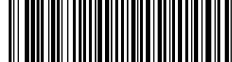


Поместите ковеву для
проб в измерительную
шахту. Обращайте
внимание на
позиционирование.



Нажмите клавишу TEST
(XD: CTAPT).

На дисплее отображается результат в виде Кислотная сила $K_{s4.3}$.



Взвеш. твердые вещества 24

M384

10 - 750 mg/L TSS

SuS

Мутность / пропускаемый свет

Материал

RU

Необходимый материал (частично необязательный):

| Реактивы | Упаковочная единица | Номер заказа |
|-----------------------------|---------------------|--------------|
| Нет потребности в реагентах | | |

Отбор проб

1. Измерьте пробу воды как можно быстрее после отбора пробы. Пробы могут храниться до 7 дней при температуре 4 °C в пластиковых или стеклянных бутылках. Измерение должно производиться при той же температуре, что и при отборе пробы. Разница температур при измерении и отборе проб может изменить результат измерения.

Примечания

1. Фотометрическое определение взвешенных частиц основано на гравиметрическом методе. В лаборатории испарение остатков фильтра пробы фильтрованной воды обычно производится в печи при температуре 103 - 105 °C, и высушенный остаток взвешивается.
2. Если требуется повышенная точность, необходимо провести гравиметрическое определение пробы. Этот результат может быть использован для пользовательской юстировки фотометра с той же пробой.
3. Предполагаемый предел обнаружения для этого метода составляет 20 мг/л TSS.

Выполнение определения Взвешенные частицы

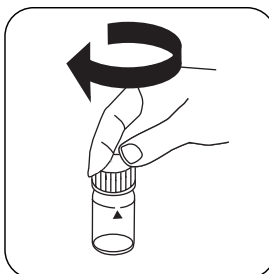
Выберите метод в устройстве.

Для этого метода необязательно проводить измерение НУЛЯ каждый раз на следующих устройствах: XD 7000, XD 7500

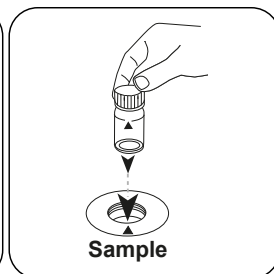
Гомогенизируйте мл пробы воды в миксере на высокой ступени скорости в течение минут.



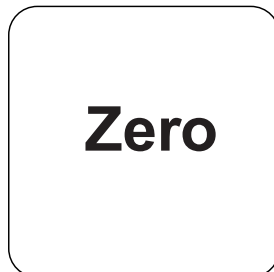
Наполните кювету 24 мм мл полностью деминерализованной воды 10.



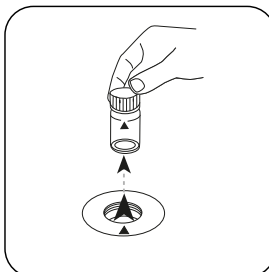
Закройте кювету(ы).



Поместите **кювету для проб** в измерительную шахту. Обращайте внимание на позиционирование.

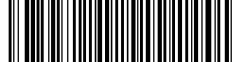


Нажмите клавишу **НОЛЬ** . Извлеките кювету из измерительной шахты.

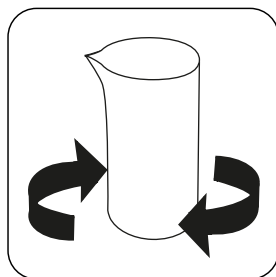


Для приборов, для которых не требуется **измерение нулевого значения** , начните **отсюда**.

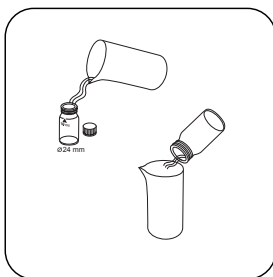
RU



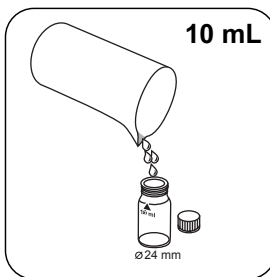
RU



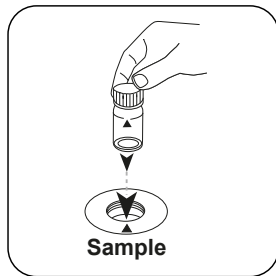
Хорошо перемешать гомогенизированную пробу воды.



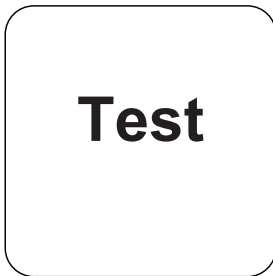
Предварительно промойте кювету пробой воды.



Наполните кювету 24-мм **10 мл подготовленной пробы** .



Поместите **кювету для проб** в измерительную шахту. Обращайте внимание на позиционирование.



Нажмите клавишу **ТЕСТ** (XD: **СТАРТ**).

На дисплее отображается результат в мг/л TSS (Взвешенные частицы).

Химический метод

Мутность / пропускаемый свет

Приложение

Нарушения

Постоянные нарушения

- Цвет мешает при поглощении света на расстоянии 660 нм.

Исключаемые нарушения


- Воздушные пузырьки создают помехи и могут быть удалены путем легкого покачивания кюветы.

Проверка метода

| | |
|------------------------------------------|----------------|
| Предел обнаружения | 10 mg/L |
| Предел детерминации | 30 mg/L |
| Конечное значение диапазона измерений | 750 mg/L |
| Восприимчивость | 550 mg/L / Abs |
| Доверительная область | 4.24 mg/L |
| Среднеквадратическое отклонение процесса | 1.79 mg/L |
| Коэффициент вариации метода | 0.47 % |

Выведено из

EN 872:2005

KS4.3 T / 20


方法名称

方法号

用于方法检测的条形码

测量范围

酸性 / 指示剂

屏幕显示: MD 100 / MD 110 / MD 200

化学方法

儀器的具體信息

測試可以在以下設備上執行。此外還指出了所需的比色杯和光度計的吸收範圍。

| 儀器類型 | 比色皿 | λ | 測量範圍 |
|-------------------------------------------------------------------|---------------------|-----------|---------------------------|
| MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630 | \varnothing 24 mm | 610 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |
| SpectroDirect, XD 7000, XD 7500 | \varnothing 24 mm | 615 nm | 0.1 - 4 mmol/l $K_{S4.3}$ |

材料

所需材料 (部分可選) :

| 標題 | 包裝單位 | 貨號 |
|-------------------|----------|----------|
| Alka-M-Photometer | 片劑 / 100 | 513210BT |
| Alka-M-Photometer | 片劑 / 250 | 513211BT |

應用列表

- 污水處理
- 飲用水處理
- 原水處理

備註

1. 術語總度-m、m-值、總碱度和酸容量 $K_{S4.3}$ 是相同的。
2. 準確地遵守 10 ml 的樣本體積對分析結果的準確度至關重要。

語言代碼 ISO 639-1

修訂狀態

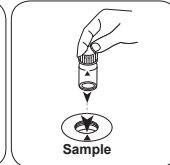
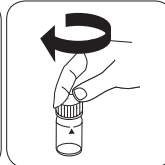
CN 方法手冊 01/20

开始测量

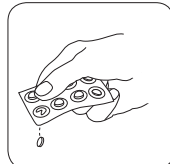
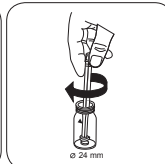
进行测定 $K_{s4.3}$ 片剂酸容量

选择设备中的方法。

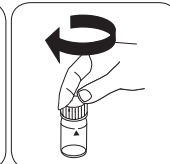
对于这种方法，在以下设备上不能进行 ZERO 测量：XD 7000, XD 7500

用 10 ml 样本填充 24 mm 比密封比色杯。
色杯。将样本比色杯放入测量轴
中。注意定位。

• • •

加入 ALKA-M-PHOTOME-
TER 片剂。

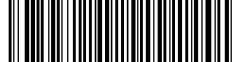
用轻微的扭转压碎片剂。



密封比色杯。

CN 方法手册 01/20

ZH



悬浮固体 24

M384

10 - 750 mg/L TSS

SuS

浊度 / 衰减辐射法

材料

所需材料 (部分可选) :

ZH

试剂

包装单位

货号

不需要试剂

取样

1. 取样后尽快测试水样。样本可以在 4 °C 下在塑料或玻璃瓶中储存长达 7 天。测量应在与取样相同的温度下进行。测量和取样之间的温差可能会改变测量结果。

备注

1. 悬浮固体的光度测定基于重量分析法。在实验室中，过滤水样的过滤残余物的蒸馏通常在 103 °C - 105 °C 的烘箱中进行，称出干燥的残余物。
2. 如果需要提高准确度，则应进行样本重量测定。这个结果可以用于用户调整同一样本的光度计。
3. 该方法的估计检出限为 20 mg/L TSS。

进行测定 悬浮固体

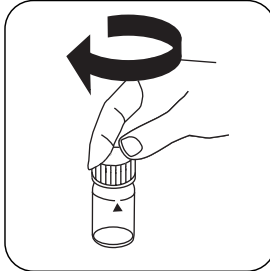
选择设备中的方法。

对于此方法，不必每次都在以下设备上上进行零测量：XD 7000, XD 7500

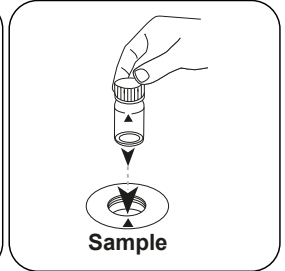
在高速混合器中将 mL 水样均质化 分钟。



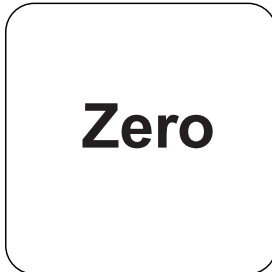
用 10 mL 去离子水填充 24 mm 比色杯。



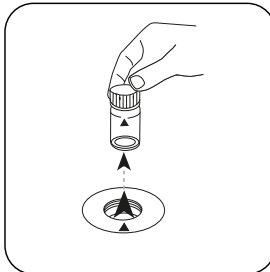
密封比色杯。



将样本比色杯放入测量轴中。注意定位。

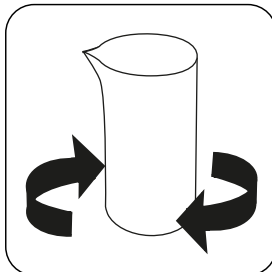


按下 ZERO 按钮。

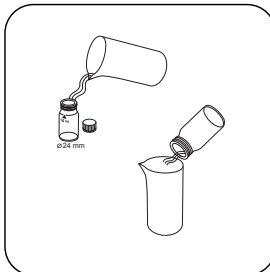


从测量轴上取下比色杯。

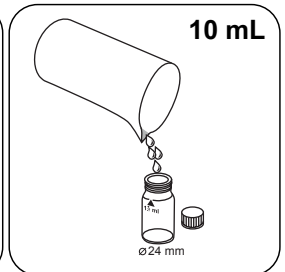
对于不需要 ZERO 测量的设备，从这里开始。



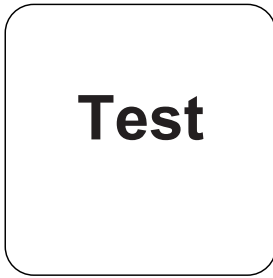
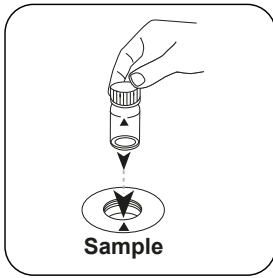
彻底混匀均匀的水样。



用水样预清洗比色杯。



用 10 mL 准备好的样本填充 24 mm 比色杯。



ZH

将样本比色杯放入测量轴中。注意定位。

按下 **TEST (XD: START)** 按钮。

结果在显示屏上显示为 mg / l TSS (总固体悬浮物)。

化学方法

浊度 / 衰减辐射法

附錄

干扰说明

持续干扰

- 当光在 660 nm 处被吸收时，颜色会干扰。

可消除干扰

- 气泡干扰，可以通过轻微摇动比色杯来消除。

方法验证

| | |
|------|----------------|
| 检出限 | 10 mg/L |
| 测定下限 | 30 mg/L |
| 测量上限 | 750 mg/L |
| 灵敏度 | 550 mg/L / Abs |
| 置信范围 | 4.24 mg/L |
| 标准偏差 | 1.79 mg/L |
| 变异系数 | 0.47 % |

源于

EN 872:2005

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