

# CHECKIT<sup>®</sup> Comparator D55

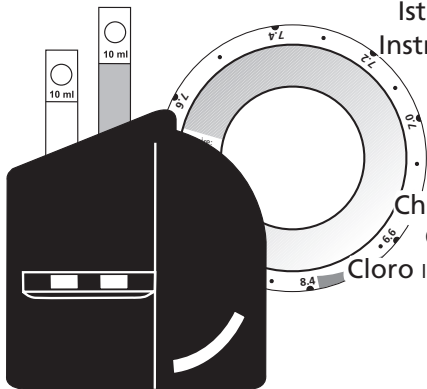
Bedienungsanleitung **(DE)**

Instruction Manual **(GB)**

Mode d'emploi **(FR)**

Istruzioni per l'uso **(IT)**

Instrucciones de uso **(ES)**



Chlor frei, geb., gesamt

Chlorine free, combined, total

Chlore libre, combiné, total

Cloro libero, combinato, complessivo

Cloro libre, ligado, total

**Tablet Reagent**

# Anleitung zur Bestimmung von Chlor (DPD)

Freies, gebundenes und Gesamtchlor

**CHECKIT®Disc**

**Messbereich**

**Bestell-Nr.**

Chlorine

0,02 - 0,3 mg/l Cl<sub>2</sub>

14 60 00

**Genauigkeit:** ± 5 % vom Messbereichsendwert

**Tabletten**

**Bestell-Nr. per 100 Stück**

DPD No.1 - freies Chlor

51 10 60

DPD No.3 - gebundenes und Gesamtchlor

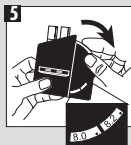
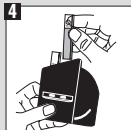
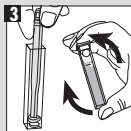
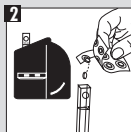
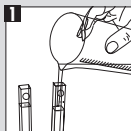
51 10 80

## Freies Chlor (DPD No.1-Tablette)

- 1 Beide Küvetten mit der Probe bis zur 10 ml-Marke füllen.
- 2 Eine Küvette ohne Deckel als Blindprobe in die linke Kammer des Comparators stellen. In die andere Küvette eine DPD No.1-Tablette geben.
- 3 Die Tablette mit Rührstab zerdrücken. Küvette verschließen. Tablette durch Umschwenken auflösen.
- 4 Deckel abnehmen. Die zweite Küvette in die rechte Kammer des Comparators stellen. Comparator schräg halten, damit genügend Tagesnordlicht von oben in die Küvette fällt. Die Spiegel-einheit nutzt die Durchsicht durch die gesamte Küvettenlänge.
- 5 Nach dem Abgleich mit der CHECKIT®Disc wird das Ergebnis in mg/l Cl<sub>2</sub> abgelesen.

## Gesamt- und gebundenes Chlor (zusätzlich DPD No.3-Tablette)

- 6 Nach der Bestimmung des freien Chlors die Küvette aus der rechten Kammer nehmen. Eine DPD No.3-Tablette zu der Probe geben.
- 7 Die Tablette mit dem Rührstab zerkleinern. Küvette mit dem Deckel verschließen und die Tablette durch leichtes Schwenken auflösen.
- 8 Deckel abnehmen. Küvette in die rechte Kammer des Comparators stellen.



9 Nach 2 Minuten Reaktionszeit durch Abgleich mit der CHECKIT®Disc 10 das Ergebnis als Gesamtchlor in mg/l ablesen. Dabei Comparator schräg halten, damit genügend Tagesnordlicht von oben in die Küvette fällt. Die Spiegeleinheit nutzt die Durchsicht durch die gesamte Küvettenlänge.

### Gebundenes Chlor

Das Ergebnis „Freies Chlor“ wird vom Messwert „Gesamtchlor“ abgezogen. Die Differenz stellt den Wert an gebundenem Chlor dar.

Beispiel:	Gesamtchlor	0,2 mg/l
	- Freies Chlor	0,06 mg/l
	<b>= Gebundenes Chlor</b>	<b>0,14 mg/l</b>

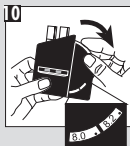
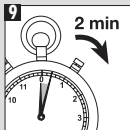
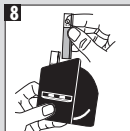
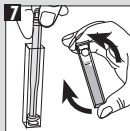
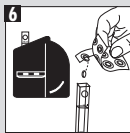
### Wichtig:

Die Küvette muss mit dem Punkt zum Betrachter im Messschacht positioniert werden.

Comparator schräg halten, damit genügend Tagesnordlicht von oben in die Küvette fällt. Die Spiegeleinheit nutzt die Durchsicht durch die gesamte Küvettenlänge.

Küvetten müssen nach jeder Bestimmung gründlich gespült werden.

CHECKIT®Disc lichtgeschützt / dunkel lagern.



## Instructions for the determination of chlorine (DPD)

Free, combined and total chlorine

CHECKIT® Disc	Measurement Range	Order Code
Chlorine	0.02 - 0.3 mg/l Cl <sub>2</sub>	14 60 00

**Accuracy:** ± 5 % full scale

### Tablets

DPD No. 1 - free chlorine

DPD No. 3 - combined and total chlorine

### Order Code (per 100 pcs)

51 10 60

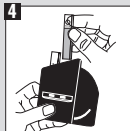
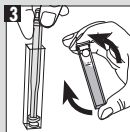
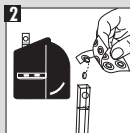
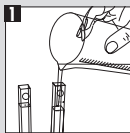
51 10 80

### Free chlorine (DPD No. 1-tablet)

- 1 Fill both cells to the 10 ml mark and 2 place one cell without lid in the left-hand compartment of the comparator as a blank.
- 2 Add one DPD No. 1-tablet in the other cell. 3 Crush the tablet with a clean stirring rod, close it with a lid and swirl it until the tablet has dissolved. 4 Remove lid. Place this second cell in the right-hand compartment of the comparator. Hold the comparator diagonally so that enough north day light enters the cuvette. The mirror unit makes use of the view through the entire length of the cuvette. 5 Read off the result in mg/l free chlorine.

### Total and combined chlorine (with the addition of DPD tablet No. 3)

- Having completed the test for free chlorine, 6 take the cell from the right-hand compartment of the comparator and add one DPD No. 3-tablet. 7 Crush the tablet with a clean stirring rod, replace the lid and swirl the cell until the tablet is dissolved. 8 Remove lid. Place the cell in the right-hand compartment and 9 allow for 2 minutes reaction time. Hold the comparator diagonally so that enough north day light enters the cuvette.



The mirror unit makes use of the view through the entire length of the cuvette. Compare the two colour fields and ⑩ read off the result as total chlorine in mg/l.

### Combined chlorine

Deduct the reading for free chlorine from the figure obtained for total chlorine. The difference represents the result for combined chlorine.

Example:	total chlorine	0.2 mg/l
	minus free chlorine	0.06 mg/l
	<hr/>	
<b>gives :</b>	<b>combined chlorine</b>	<b>0.14 mg/l</b>

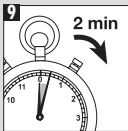
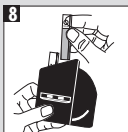
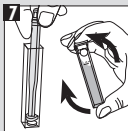
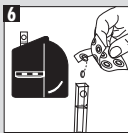
### Important:

Place the cell with the mark (point) to the viewer in the compartment.

It is essential to rinse the cells thoroughly after each test.

Hold the comparator on the slant so that enough north day light goes through the cell. The mirror unit makes use of the view through the entire length of the cell.

Store CHECKIT®Disc in the dark.



## Mode d'emploi pour la détermination du chlore (DPD)

Chlore libre actif, combiné ou total

CHECKIT®Disc	Plage de mesure	Référence de commande
Chlorine	0.02 - 0.3 mg/l Cl <sub>2</sub>	14 60 00

**Precision de la mesure:** ± 5 % de valeur plafond de la plage de mesure

**Pastilles Référence de commande pour 100 pastilles**

DPD No. 1 - chlore libre actif 51 10 60

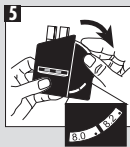
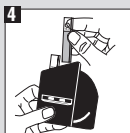
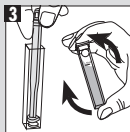
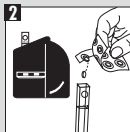
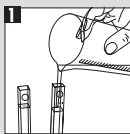
DPD No. 3 - chlore combiné et total 51 10 80

### Chlore libre actif (pastille DPD No. 1)

❶ Remplir les deux cuves avec l'échantillon jusqu'à la marque 10 ml. ❷ Placer une cuve sans couvercle dans la chambre de mesure de gauche du comparateur (solution témoin). Ajouter une pastille de DPD No.1 dans l'autre cuve. ❸ Ecraser la pastille, refermer la cuve et dissoudre la pastille en agitant la cuve. ❹ Enlever le couvercle et placer celle-ci dans la chambre de mesure de droite. Tenir le comparateur penché de façon à laisser pénétrer suffisamment de lumière du jour dans la cuvette. Le miroir utilise la transparence de la cuvette sur toute sa longueur. ❺ Faire concorder la couleur obtenue avec le CHECKIT®Disc et lire le résultat en mg/l de chlore libre actif.

### Chlore total et combiné (compléter avec une pastille DPD No. 3)

Après avoir déterminé le chlore libre, ❻ ajouter à son contenu une pastille de DPD No. 3. ❿ Ecraser la pastille, refermer la cuve et dissoudre la pastille en agitant doucement. Ⓚ Enlever le couvercle. Placer la cuve dans la chambre de mesure de droite du comparateur et Ⓛ attendre un temps de réaction de 2 minutes.



Tenir le comparateur penché de façon à laisser pénétrer suffisamment de lumière du jour dans la cuvette. Le miroir utilise la transparence de la cuvette sur toute sa longueur. Faire concorder la couleur obtenue avec le CHECKIT®Disk et 10 lire le résultat en mg/l de chlore total.

### Chlore combiné

Retirer le résultat «chlore libre actif» de la valeur obtenue de «chlore total». La différence correspond à la valeur de chlore combiné.

Exemple:	chlore total	0,2 mg/l
-	chlore libre	0,06 mg/l
=	<b>chlore combiné</b>	<b>0,14 mg/l</b>

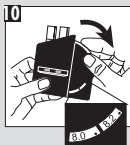
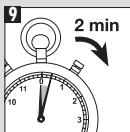
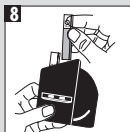
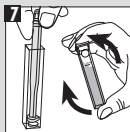
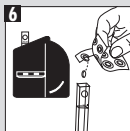
### Important:

La cuve doit être positionnée de façon à ce que le point concorde avec le repère de la chambre de mesure.

Tenir le comparateur penché de façon à laisser pénétrer suffisamment de lumière du jour dans la cuvette. Le miroir utilise la transparence de la cuvette sur toute sa longueur.

Les cuves doivent être bien nettoyées après chaque mesure.

Stocker CHECKIT®Disk dans un endroit sombre.



## Istruzioni per la determinazione di cloro (DPD)

Cloro libero attivo, combinato e complessivo

CHECKIT®Disc	Campo di misurazione	Cod. art.
Chlorine	0.02 - 0.3 mg/l $\text{Cl}_2$	14 60 00

**Precisione di dischi:** +/- 5% del valore finale.

**Compresse** **Cod. art. ogni 100 pezzi**

DPD No. 1 - cloro libero attivo 51 10 60

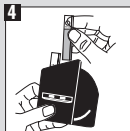
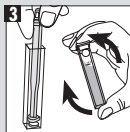
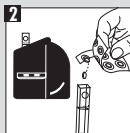
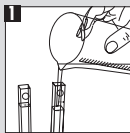
DPD No. 3 - cloro combinato e complessivo 51 10 80

### Cloro libero attivo (compressa DPD No.1)

- 1 Riempire le due cuvette con il campione fino alla tacca 10 ml.
- 2 Porre una cuvetta come bianco senza il coperchio nella camera a sinistra del comparatore. Introdurre una compressa DPD No. 1 nell'altra cuvetta.
- 3 Frantumarla con un agitatore pulito e chiudere con il coperchio. Far sciogliere la compressa agitando leggermente.
- 4 Rimuovere il coperchio. Far sciogliere la compressa capovolgendo la cuvetta che poi verrà inserita nella camera a destra. Mantenga il comparatore diagonalmente in modo che abbastanza luce del giorno entra nella cuvetta. L'unità dello specchio usa la vista dall'intera lunghezza della cuvetta.
- 5 In seguito alla compensazione con il CHECKIT®Disc il risultato viene letto in mg/l come cloro libero attivo.

### Cloro combinato e complessivo (con aggiunta della compressa DPD No.3)

- 6 Dopo aver determinato il cloro libero prendere la cuvetta dalla camera a destra ed aggiungere al campione una compressa DPD No.3.
- 7 Frantumarla con un agitatore pulito e chiudere con il coperchio. Far sciogliere la compressa agitando leggermente.
- 8 Rimuovere il coperchio. Porre la cuvetta nella camera a destra del comparatore
- 9 e dopo 2 minuti di tempo di reazione tramite compensazione.





Mantenga il comparatore diagonalmente in modo che abbastanza luce del giorno entra nella cuvetta. L'unità dello specchio usa la vista dall'intera lunghezza della cuvetta.

10 Leggere il risultato come cloro complessivo in mg/l con il CHECKIT® Disc.

### Cloro combinato

Il risultato "Cloro libero attivo" viene sottratto dal valore "Cloro complessivo". La differenza rappresenta il valore di cloro combinato.

Esempio:	Cloro complessivo	0,6 mg/l
-	Cloro libero	0,02 mg/l
=	<b>Cloro combinato</b>	<b>0,14 mg/l</b>

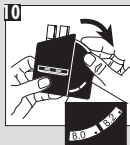
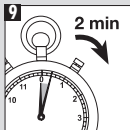
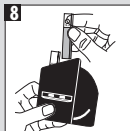
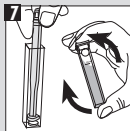
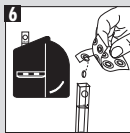
### Importante:

La cuvetta deve essere posizionata nel pozzetto di misurazione con il punto verso l'osservatore.

Mantenga il comparatore diagonalmente in modo che abbastanza luce del giorno entra nella cuvetta. L'unità dello specchio usa la vista dall'intera lunghezza della cuvetta.

Le cuvette devono essere sempre lavate accuratamente in seguito ad ogni determinazione.

Conservare CHECKIT® Disc oscuro.



## Instrucciones para la determinación de cloro (DPD)

Cloro libre, ligado y total

CHECKIT®Disc	Campo de medición	Número de pedido
Chlorine	0.02 - 0.3 mg/l Cl <sub>2</sub>	14 60 00

**Precisión de discos:** ± 5 % del valor final

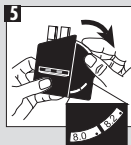
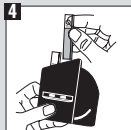
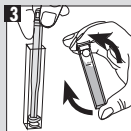
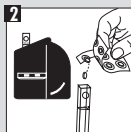
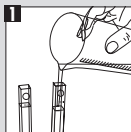
Tabletas	Número de pedido
DPD No. 1 - cloro libre	51 10 60
DPD No. 3 - cloro ligado y total	51 10 80

### Cloro libre (tableta DPD No.1 DPD No.1)

① Llenar ambas cubetas con la prueba hasta la marca de 10 ml. ② Colocar una cubeta como ensayo en blanco sin la tapa en el compartimento izquierdo del Comparador. Añadir a la segunda cubeta una tableta DPD No.1. ③ Machacarla con una varilla, cerrarla con su tapa y moverlos para disolver la tableta. ④ Quitar la tapa. Agitar hasta la disolución total de la tableta y colocar esta cubeta en el compartimento derecho. Guarde el comparador diagonalmente de modo que bastante luz diurna entre en la cubeta. La unidad del espejo hace uso la visión por la longitud entera de la cubeta. ⑤ Una vez realizada la igualación del color producido en la cubeta con el CHECKIT®Disc, leer el resultado en mg/l de cloro libre.

### Cloro total y ligado (adicionalmente con tableta DPD No.3)

⑥ Una vez finalizada la determinación de cloro libre, sacar la cubeta derecha del compartimento. Añadir a la prueba una tableta DPD No.3. ⑦ Machacarla con una varilla, cerrarla con su tapa y moverlos para disolver la tableta. ⑧ Quitar la tapa. Colocar la cubeta en el compartimento derecho del Comparador ⑨ y esperar 2 minutos de período de reacción.



Guarde el comparador diagonalmente de modo que bastante luz diurna entre en la cubeta. La unidad del espejo hace uso de la visión por la longitud entera de la cubeta. 10 Una vez realizada la igualación del color producido en la cubeta con el CHECKIT®Disc, leer el resultado en mg/l de cloro total.

### Cloro ligado

El resultado de "cloro libre" se resta del resultado de "cloro total". La diferencia será el valor total de cloro ligado.

Por ejemplo:	Cloro total	0,2 mg/l
-	cloro libre	0,06 mg/l
=	<b>cloro ligado</b>	<b>0,14 mg/l</b>

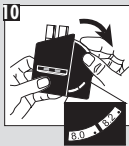
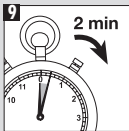
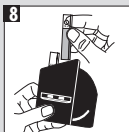
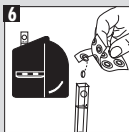
### Importante:

Posicionar la cubeta en el compartimento de tal forma, que el punto se encuentre dirigido hacia el usuario.

Guarde el comparador diagonalmente de modo que bastante luz diurna entre en la cubeta. La unidad del espejo hace uso de la visión por la longitud entera de la cubeta.

Las cubetas se deberán de limpiar y enjuagar minuciosamente después de cada determinación.

Almacene CHECKIT®Disc obscuro.



Other available tests	Range
<b>Aluminium</b>	0 - 0.3 mg/l Al
<b>Ammonia</b>	0 - 1 mg/l N
<b>Ammonia vario</b>	0 - 0.5 mg/l N
<b>Bromine</b>	0.5 - 5 mmol/l
<b>Chlorine</b>	0 - 1 mg/l Cl <sub>2</sub>
free, combined, total	0.1 - 2 mg/l Cl <sub>2</sub> 0 - 4 mg/l Cl <sub>2</sub>
<b>Chlorine*</b>	0.02 - 0.3 mg/l Cl <sub>2</sub>
<b>Chlorine Dioxide*</b>	0.01 - 0.2 mg/l ClO <sub>2</sub>
<b>Chlorine HR (total)</b>	10 - 300 mg/l Cl <sub>2</sub>
<b>Chlor vario</b>	0 - 3.5 mg/l Cl
<b>Copper (Cu<sup>2+</sup>)</b>	0 - 1 mg/l Cu
<b>Copper LR*</b> (free + total)	0 - 1 mg/l Cu
<b>Copper HR</b> (free + total)	0 - 5 mg/l Cu
<b>Copper LR vario*</b> (free)	0 - 1 mg/l Cu
<b>Copper HR vario</b> (free)	0 - 5 mg/l Cu
<b>DEHA</b>	0 - 0,5 mg/l DEHA
<b>Fluoride</b>	0.2 - 2 mg/l F
<b>Iron LR</b>	0.05 - 1 mg/l Fe
<b>Iron HR</b>	1 - 10 mg/l Fe

Other available tests	Range
<b>Iron TPTZ</b>	0 - 1,8 mg/l Fe
<b>Manganese LR</b>	0.1 - 0.7 mg/l Mn
<b>Manganese VLR*</b>	0.02 - 0.2 mg/l Mn
<b>Molybdate</b>	0 - 100 mg/l MoO <sub>4</sub>
<b>Nitrate LR</b>	0 - 1 mg/l N
<b>Nitrate HR</b>	10 - 100 mg/l NO <sub>3</sub>
<b>Nitrite LR</b>	0 - 0.5 mg/l N
<b>Nitrite LR vario</b>	0 - 0.3 mg/l N
<b>Ozone (DPD)</b>	0 - 0.7 mg/l O <sub>3</sub>
<b>Ozone (DPD)</b>	0 - 1.0 mg/l O <sub>3</sub>
<b>pH</b>	5.2 - 6.8 pH, 6.0 - 7.6 pH, 6.5 - 8.4 pH, 4 - 10 pH
<b>Phosphate LR</b>	0 - 4 mg/l PO <sub>4</sub>
<b>Phosphate HR</b>	0 - 80 mg/l PO <sub>4</sub>
<b>Phosphate vario</b>	0 - 2.5 mg/l PO <sub>4</sub>
<b>Säurekapazität Ks4.3</b>	0,5 - 5 mmol/l
<b>Silica LR</b>	0.25 - 4 mg/l SiO <sub>2</sub>
<b>Silica vario</b>	0 - 100 mg/l SiO <sub>2</sub>
<b>Silica VLR*</b>	0 - 1 mg/l SiO <sub>2</sub>
<b>Sodium Hypochlorite</b>	2 - 18 % NaOCl
<b>Sulfite LR</b>	0.5 - 10 mg/l SO <sub>3</sub> <sup>2-</sup>
<b>Total Alkalinity</b>	20-240 mg/l CaCO <sub>3</sub>
<b>Zinc</b>	0 - 1 mg/l Zn

\*Only with CHECKIT®Comparator D55 with mirror optics

Update: [www.tintometer.de](http://www.tintometer.de)

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Technical changes without notice

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