

CHECKIT® Comparator

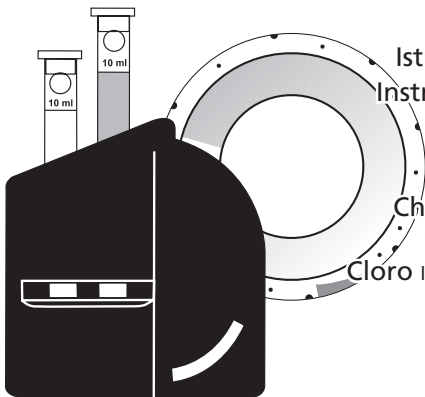
Bedienungsanleitung **DE**

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 wirksames, gebundenes und Gesamtchlor

CHECKIT®Disc

	Messbereich	Bestell-Nr.
Chlor	0 - 1,0 mg/l	14 60 10
Chlor	0 - 2,0 mg/l	14 60 40
Chlor	0 - 4,0 mg/l	14 60 20

Genauigkeit: $\pm 5\%$ vom Messbereichsendwert

Tabletten

Bestell-Nr. per 100 Stück

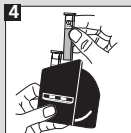
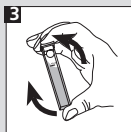
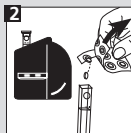
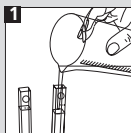
DPD No.1 (R) - freies wirksames Chlor	51 13 10
DPD No.3 (R) - gebundenes und Gesamtchlor	51 12 90
DPD No.4 (R) - Gesamtchlor	51 15 70
Schnell-lösliche DPD-Tabletten (grün bedruckte Folie = Typ Rapid (R))	

Freies wirksames Chlor (DPD No.1 (R)-Tablette)

- 1 Beide Küvetten mit der Probe bis zur 10 ml-Marke füllen.
- 2 Eine Küvette als Blindprobe in die linke Kammer des Comparators stellen und mit dem Deckel verschließen.
- 3 In die andere Küvette eine DPD No.1 (R)-Tablette geben.
- 4 Die Tablette durch Umschwenken auflösen und in die rechte Kammer stellen.
- 5 Nach dem Abgleich mit der CHECKIT®Disc wird das Ergebnis in mg/l als freies wirksames Chlor abgelesen.

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

- 6 Nach der Bestimmung des freien Chlors die Küvette aus der rechten Kammer nehmen. Eine DPD No.3 (R)-Tablette zu der Probe geben.
- 7 Küvette mit dem Deckel verschließen und die Tablette durch leichtes Schwenken auflösen.
- 8 Küvette in die rechte Kammer des Comparators stellen und
- 9 nach 2 Minuten Reaktionszeit durch Abgleich mit der CHECKIT®Disc
- 10 das Ergebnis als Gesamtchlor in mg/l ablesen.



Gebundenes Chlor

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

Beispiel:	Gesamtchlor	1.20 mg/l
	- Freies Chlor	0.42 mg/l

= Gebundenes Chlor 0.78 mg/l

Gesamtchlor – direkt (DPD No.4 (R)-Tablette)

- ❶ Beide Küvetten mit der Probe bis zur 10 ml-Marke füllen.
- ❷ Eine Küvette als Blindprobe in die linke Kammer des Comparators stellen. In die andere Küvette eine DPD No.4 (R)-Tablette geben und mit dem Deckel verschließen.
- ❸ Nach leichtem Schwenken und schneller Auflösung der Tablette (Rotfärbung)
- ❹ die Küvette in die rechte Kammer des Comparators stellen.
- ❺ Nach einer Farbreaktionszeit von 2 Minuten durch ❻ Abgleichen mit der Farbscheibe das Ergebnis als Gesamtchlor in mg/l ablesen.

Hinweis:

Über 10 mg/l Chlor bleicht der Farbindikator aus.

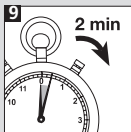
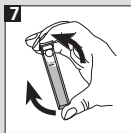
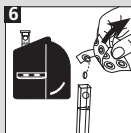
Wichtig:

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

Um höchste Genauigkeit zu gewährleisten, Farbabgleich immer gegen Tagesnordlicht durchführen.

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
Chlor	0 - 1.0 mg/l	14 60 10
Chlor	0.1 - 2.0 mg/l	14 60 40
Chlor	0 - 4.0 mg/l	14 60 20

Accuracy: $\pm 5\%$ full scale

Tablets

Order Code (per 100 pcs)

DPD No. 1 (R) - free chlorine	51 13 10
DPD No. 3 (R) - combined and total chlorine	51 12 90
DPD No. 4 (R) - total chlorine	51 15 70
Rapid dissolving DPD tablets (green printed foil = Type Rapid (R))	

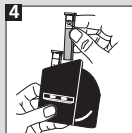
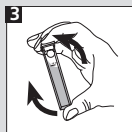
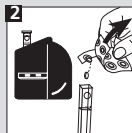
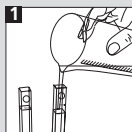
Free chlorine (DPD No. 1 (R)-tablet)

① Fill both cells to the 10 ml mark and ② place one cell in the left-hand compartment of the comparator as a blank. ③ Add one DPD No. 1 (R)-tablet in the other cell, close it with a lid and ④ swirl it until the tablet has dissolved. ⑤ Place this second cell in the right-hand compartment of the comparator ⑥ match the two colour fields against north day light and read off the result in mg/l free chlorine.

Total and combined chlorine

(with the addition of DPD tablet No. 3 (R))

Having completed the test for free chlorine, ⑦ take the cell from the right-hand compartment of the comparator, remove the lid and add one DPD No. 3 (R)-tablet. ⑧ Replace the lid and swirl the cell until the tablet is dissolved. ⑨ Place the cell in the right-hand compartment and ⑩ allow for 2 minutes reaction time. Then compare the two colour fields against north daylight and ⑪ 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	1.20 mg/l
	minus : free chlorine	0.42 mg/l

gives :	combined chlorine	0.78 mg/l
----------------	--------------------------	------------------

Total chlorine - direct (DPD No. 4 (R)-tablet)

① Fill both cells to the 10 ml mark and ② place one cell in the left-hand compartment of the comparator as a blank. ③ Place one DPD No. 4 (R)-tablet in the other cell, close it with a lid and ④ swirl it until the tablet is dissolved. ⑤ Place this second cell in the right-hand compartment of the comparator and ⑥ wait for 2 minutes reaction time. ⑦ Then compare the two colour fields against north daylight and read off the result as total chlorine in mg/l.

Note:

Levels of chlorine above 10 mg/l can cause bleaching of the sample.

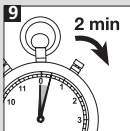
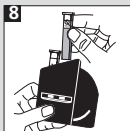
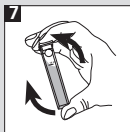
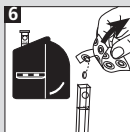
Important:

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

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

To obtain maximum accuracy always view and match colour against north daylight.

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

Chlore	0 - 1,0	mg/l	14 60 10
Chlore	0,1 - 2,0	mg/l	14 60 40
Chlore	0 - 4,0	mg/l	14 60 20

Precision de la mesure: $\pm 5\%$ de valeur plafond de la plage de mesure

Pastilles Référence de commande pour 100 pastilles

DPD No. 1 (R) - chlore libre actif 51 13 10

DPD No. 3 (R) - chlore combiné et total 51 12 90

DPD No. 4 (R) - chlore total 51 15 70

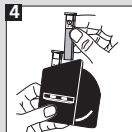
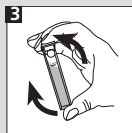
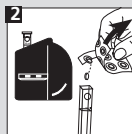
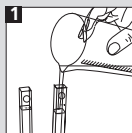
Pastilles DPD solubles rapidement (plaquette imprimée en vert = type Rapide (R))

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

❶ Remplir les deux cuves avec l'échantillon jusqu'à la marque 10 ml. ❷ Placer une cuve dans la chambre de mesure de gauche du comparateur (solution témoin). Ajouter une pastille de DPD No.1 (R) dans l'autre cuve. ❸ Refermer la cuve et dissoudre la pastille en agitant la cuve et ❹ placer celle-ci dans la chambre de mesure de droite. 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 (R))

Après avoir déterminé le chlore libre, ❻ retirer la cuve de la chambre de mesure de droite et ajouter à son contenu une pastille de DPD No. 3 (R). ❼ Refermer la cuve et dissoudre la pastille en agitant doucement. ❽ Placer la cuve dans la chambre de mesure de droite du comparateur et ❾ attendre un temps de réaction de 2 minutes. Faire concorder la couleur obtenue avec le CHECKIT®Disc et ⓫ 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	1,20 mg/l
-	chlore libre	0,42 mg/l
=	chlore combiné	0,78 mg/l

Chlore total – direct (pastille DPD No. 4 (R))

① Remplir les deux cuves avec l'échantillon jusqu'à la marque 10 ml. ② Placer une cuve dans la chambre de mesure de gauche du comparateur (solution témoin). ③ Ajouter une pastille de DPD No. 4 (R) dans l'autre cuve et la refermer. Après avoir agité doucement le contenu de la cuve, ④ dissoudre la pastille (coloration rouge) ⑤ et placer celle-ci dans la chambre de mesure de droite du comparateur. ⑥ Attendre un temps de réaction de 2 minutes puis faire concorder la couleur obtenue avec le CHECKIT®Disc. ⑦ Lire le résultat en mg/l de chlore total.

Remarque:

Pour une teneur de chlore libre supérieure à 10 mg/l, l'indicateur coloré peut se décolorer.

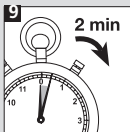
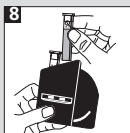
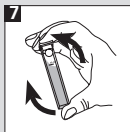
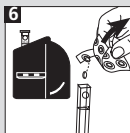
Important:

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

Pour assurer la plus grande exactitude, faire concorder la couleur avec le CHECKIT®Disc en tenant le comparateur face à la lumière.

Les cuves doivent être bien nettoyées après chaque mesure.

Stocker CHECKIT®Disc dans un endroit sombre.



Istruzioni per la determinazione di cloro (DPD)

Cloro libero attivo, combinato e complessivo

CHECKIT®Disc

	Campo di misurazione	Cod. art.
Cloro	0 - 1,0 mg/l	14 60 10
Cloro	0,1 - 2,0 mg/l	14 60 40
Cloro	0 - 4,0 mg/l	14 60 20

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

Comprese

Cod. art. ogni 100 pezzi

DPD No. 1 (R) - cloro libero attivo	51 13 10
DPD No. 3 (R) - cloro combinato e complessivo	51 12 90
DPD No. 4 (R) - cloro complessivo	51 15 70

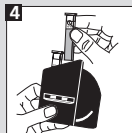
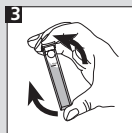
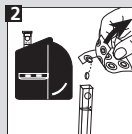
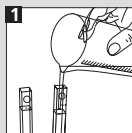
Comprese DPD a scioglimento rapido (pellicola stampata verde = Tipo Rapid (R))

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

- 1 Riempire le due cuvette con il campione fino alla tacca 10 ml.
- 2 Porre una cuvetta come bianco nella camera a sinistra del comparatore.
- 3 Introdurre una compressa (R) DPD No. 1 nell'altra cuvetta e chiudere con il coperchio.
- 4 Far sciogliere la compressa capovolgendo la cuvetta che poi verrà inserita nella camera a destra.
- 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 (R) DPD No.3)

- 6 Dopo aver determinato il cloro libero prendere la cuvetta dalla camera a destra ed aggiungere al campione una compressa (R) DPD No.3.
- 7 Chiudere la cuvetta con il coperchio e far sciogliere la compressa agitando leggermente.
- 8 Porre la cuvetta nella camera a destra del comparatore
- 9 e dopo 2 minuti di tempo di reazione tramite compensazione
- 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	1,20 mg/l
-	Cloro libero	0,42 mg/l
=	Cloro combinato	0,78 mg/l

Cloro complessivo – diretto (compressa (R) DPD No.4)

❶ Riempire le due cuvette con il campione fino alla tacca 10 ml. ❷ Porre una cuvette come bianco nella camera a sinistra del comparatore. Introdurre una compressa (R) DPD No. 4 nell'altra cuvette ❸ e chiudere con il coperchio. ❹ Dopo aver agitato leggermente e fatto sciogliere rapidamente la compressa (colorazione rossa) inserire la cuvette nella camera a destra del comparatore. ❺ Dopo un tempo di reazione del colore di 2 minuti tramite compensazione ❻ leggere il risultato in mg/l come cloro complessivo con il dischetto colorato.

Nota:

Oltre i 10 mg/l di cloro libero l'indicatore cromatico può sbiancarsi.

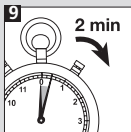
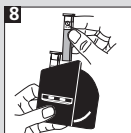
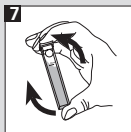
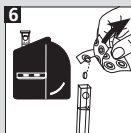
Importante:

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

Per garantire la massima precisione eseguire sempre la compensazione del colore contro la luce del giorno.

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
Cloro	0 - 1,0 mg/l	14 60 10
Cloro	0,1 - 2,0 mg/l	14 60 40
Cloro	0 - 4,0 mg/l	14 60 20

Precisión de discos: $\pm 5 \%$ del valor final

Tabletas

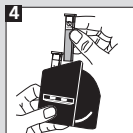
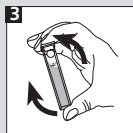
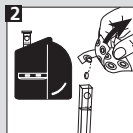
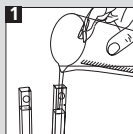
	Número de pedido
DPD No. 1 (R) - cloro libre	51 13 10
DPD No. 3 (R) - cloro ligado y total	51 12 90
DPD No. 4 (R) - Cloro total	51 15 70
Tabletas DPD de disolución rápida (envoltura impresa en verde = Typ Rapid(R))	

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

❶ Llenar ambas cubetas con la prueba hasta la marca de 10 ml. ❷ Colocar una cubeta como ensayo en blanco en el compartimento izquierdo del Comparador. ❸ Añadir a la segunda cubeta una tableta DPD No.1 y cerrarla con su tapa. ❹ Agitar hasta la disolución total de la tableta y colocar esta cubeta en el compartimento derecho. ❺ 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 (R))

❶ Una vez finalizada la determinación de cloro libre, sacar la cubeta derecha del compartimento. Añadir a la prueba una tableta DPD No.3 (R). ❷ Cerrar la cubeta con la tapa y agitar hasta su disolución total. ❸ Colocar la cubeta en el compartimento derecho del Comparador ❹ y esperar 2 minutos de período de reacción. ❺ 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	1,20 mg/l
-	cloro libre	0,42 mg/l
=	cloro ligado	0,78 mg/l

Cloro total – directo (tableta DPD No.4 (R))

① Llenar ambas cubetas con la prueba hasta la marca de 10 ml. ② Colocar una cubeta como ensayo en blanco en el compartimento izquierdo del Comparador. Añadir a la segunda cubeta una tableta DPD No.4 (R) y cerrarla con su tapa. ③ Tras agitar y disolver la tableta (coloración roja), ④ colocar la cubeta en el compartimento derecho del Comparador. ⑤ Pasados 2 minutos de período de reacción, y una vez realizada la igualación de color producido en la cubeta con el Checkit®Disc, ⑥ leer el resultado en mg/l de cloro total.

Nota:

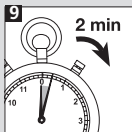
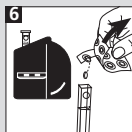
Concentraciones mayores a 10 mg/l de cloro libre, puede descolorar el indicador colóreo.

Importante:

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

Para garantizar una exactitud máxima, realizar el ajuste cromático siempre con luz diurna. Las cubetas se deberán de limpiar y enjuagar minuciosamente después de cada determinación.

Almacene CHECKIT®Disc obscuro.



<i>Other available tests</i>	<i>Range</i>
Aluminium	0 - 0.3 mg/l Al
Ammonia	0 - 1 mg/l N
Ammonia vario	0 - 0.5 mg/l N
Bromine	0.5 - 5 mmol/l
Chlorine	0 - 1 mg/l Cl ₂
free, combined, total	0.1 - 2 mg/l Cl ₂ 0 - 4 mg/l Cl ₂
Chlorine*	0.02 - 0.3 mg/l Cl ₂
Chlorine Dioxide*	0.01 - 0.2 mg/l ClO ₂
Chlorine HR (total)	10 - 300 mg/l Cl ₂
Chlor vario	0 - 3.5 mg/l Cl
Copper (Cu²⁺)	0 - 1 mg/l Cu
Copper LR* (free + total)	0 - 1 mg/l Cu
Copper HR (free + total)	0 - 5 mg/l Cu
Copper LR vario* (free)	0 - 1 mg/l Cu
Copper HR vario (free)	0 - 5 mg/l Cu
DEHA	0 - 0,5 mg/l DEHA
Fluoride	0.2 - 2 mg/l F
Iron LR	0.05 - 1 mg/l Fe
Iron HR	1 - 10 mg/l Fe

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

*Only with CHECKIT®Comparator D55 with mirror optics

Update: www.lovibond.com

No.: 00387000

Technical changes without notice

Printed in Germany 03/10