

Manual water analysis

Test sets for the determination
of substances in water



 CALDUR®

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CALDUR® is a registered trademark ...

... of RLS Wacon GmbH and comprises test sets for the manual determination of substances in water. In addition to many quick tests customary in practice for checking residual hardness, total hardness, chlorine content and iron concentration,

the CALDUR® range also includes many test sets required for niche applications. All products of the CALDUR® series are characterized in particular by their easy handling and very exact determination of the measuring point.

The test sets are offered in up to three different versions:

Hinged lid box:

This variant is the standard. It contains all chemicals, a test tube as well as all instructions and other necessary documents. The colorimetric test sets also include the colour charts. The hinged lid box is made of plastic and therefore ideal for users who need a robust and waterproof packaging.

The plastic box has a size of 103 x 91 x 36 mm.

Folded box:

Test sets in the folding box are less expensive than those in the hinged lid box. As with the hinged lid box, the folded box also contains the test tube, all chemicals and necessary documents. The box is particularly suitable if the test set can be stored in a dry place and is only used occasionally.

The dimensions of this version are 65 x 45 x 25 mm.

Refill:

In some cases, individual chemicals can be reordered for test sets with several components. The corresponding CALDUR® refills contain the chemicals and important documents. They are used to replenish a test set in a hinged lid box or in a folded box. The refills are packed in plastic bags.

Talk to us about it.





Test sets according to the limit value method ...

... enable a very simple and quick determination of the water content. Total hardness and carbonate hardness are detected as substances. The addition of a single drop of reagent determines whether the water hardness is above or below the limit value.

The determination is carried out without waiting directly after the addition of the reagent and its uniform submixing by shaking. The appropriate choice of reagent determines the limit value for which the sample water is to be tested.

Analysis: Residual hardness

CALDUR®-Test set residual hardness RG 10F

Limit value: 0.1 °fH

Analysis duration: 1 min
Number of analyses: 250
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-070 234
Folded box
Article number: 31-070 236





CALDUR®-Test set residual hardness RG 5

Limit value: 0.05 °dH

Analysis duration: 1 min
Number of analyses: 250
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-070 210

Folding box
Article number: 31-070 213



CALDUR®-Test set residual hardness RG 10

Limit value: 0.1 °dH

Analysis duration: 1 min
Number of analyses: 250
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-070 230

Folding box
Article number: 31-070 233



CALDUR®-Test set residual hardness RG 25

Limit value: 0.25 °dH

Analysis duration: 1 min
Number of analyses: 250
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-070 240

Folding box
Article number: 31-070 243



CALDUR®-Test set residual hardness RG 100

Limit value: 0.1 °dH

Analysis duration: 1 min
Number of analyses: 250
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-070 280

Folding box
Article number: 31-070 283



All these test sets are available on request in °fH or ppm.

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For the titration method ...

... the reagent is added to the sample drop by drop. The measured value is determined by simply counting the drops until the colour changes.

Using the titration method, the CALDUR® program allows the following water substances to be determined:

- Total hardness with one reagent
- Total hardness with one reagent and one titration solution
- Carbonate hardness
- Chloride
- Carbon dioxide
- Sulphate
- Sulphite
- PM-value

The time required to determine the measured value is only a few minutes. The number of possible analyses depends on the value to be determined. A typical consumption specification is attached to each product.

Like the test sets according to the limit value method, the test sets according to the titration method are typically sold in the unit of measurement °dH. Test sets in °fH and ppm are also available. Our sales team will be pleased to provide you with detailed information.



Analysis: Total hardness

CALDUR®-Test set total hardness GR

Measured value: per drop: 0.1 / 0.05 °dH

Analysis duration: 1 min
 Determinations: 100 at 1°dH
 Description: 1 reagent
 complexometric
 titration

Hinged lid box
 Article number: 31-071 330
 Folded box
 Article number: 31-071 333



CALDUR®-Test set total hardness GH

Measured value: per drop: 0.5 / 0.25 °dH

Analysis duration: 1 min
 Determinations: 100 at 5°dH
 Description: 1 reagent
 complexometric
 titration

Hinged lid box
 Article number: 31-071 320
 Folded box
 Article number: 31-071 322



CALDUR®-Test set total hardness GH 100F

Measured value: per drop: 1.0 / 0.5 °fH

Analysis duration: 1 min
 Determinations: 100 at 10°dH
 Description: 1 reagent
 complexometric
 titration

Hinged lid box
 Article number: 31-071 308
 Folded box
 Article number: 31-071 313



CALDUR®-Test set total hardness GHT 100F

Measured value: per drop: 1.0 / 0.5 °fH

Analysis duration: 1 min
 Determinations: 100 at 10°dH
 Description: 2 reagents
 (reagent and
 titration solution)
 complexometric
 titration

Hinged lid box
 Article number: 31-071 314
 Refill
 Article number: 31-071 305
 Reagent
 Article number: 31-071 306
 Titration solution
 Article number: 31-071 307





Analysis: Carbonate hardness

The CALDUR® test sets for the determination of carbonate hardness are based on an acid-base titration. One or two reagents are added to the water sample to analyze the concentration.

CALDUR®-Test set carbonat hardness CH 5

Measured value: per drop: 0.5 / 0.25 °dH

Analysis duration: 1 min
 Determinations: 100 at 5°dH
 Description: 2 reagents
 acid-base titration

Hinged lid box
 Article number: 31-071 430



CALDUR®-Test set carbonate hardness CH

Measured value: per drop: 1.0 / 0.5 °dH

Analysis duration: 1 min
 Determinations: 100 at 10°dH
 Description: 2 reagents
 acid-base titration

Hinged lid box
 Article number: 31-071 420
 Folded box
 Article number: 31-071 423





With RLS Wacon's online analyzers of the SYCON series you can analyze your water objectively and fully automatically for residual, total and carbonate hardness.

As with the CALDUR® test sets for the manual determination of residual, total and carbonate hardness on pages 4 to 8, the SYCON devices offer the option of either monitoring a limit value or measuring the exact concentration of hardness.

With all analyzers of the SYCON series the parameters can be continuously monitored automatically. The devices can be used in a wide range of applications in water treatment and are characterized by the following features:

- Simple commissioning
- Robust and durable measurement technology
- Low maintenance and service costs

At RLS Wacon, you will be advised and supported by experienced employees who develop, manufacture and commission the devices.

For a complete and detailed description of the online analyzers, please see the separately available catalogue entitled „Fully Automatic Monitoring of Water Hardness - SYCON“.

It contains a complete overview of all current analytical instruments that have been used for many years for monitoring water hardness in industrial environments.

Verification: Carbonic acid

CALDUR®-Test set carbonic acid 1mg/l CO₂

Measured value: per drop: 1 mg/l CO₂

Analysis duration: 1 min
Determinations: 100
Description: 2 reagents
acid-base titration

Hinged lid box
Article number: 31-071 550

Folded box
Article number: 31-071 551



CALDUR®-Test set carbonic acid 10mg/l CO₂

Measured value: per drop: 1 mg/l CO₂

Analysis duration: 1 min
Determinations: 100
Description: 2 reagents
acid-base titration

Hinged lid box
Article number: 31-071 560

Folded box
Article number: 31-071 561



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Verification: Chloride



CALDUR®-Test set chloride

Measured value per drop: 5mg/l Cl⁻

Analysis duration: 3 min
 Determinations: 100
 Description: 3 reagents (reagent A and B, titration solution) mercurimetric titration

Hinged lid box
 Article number: 31-071 530

Refill pack 3 reagents
 Article number: 31-071 531

Refill reagent A and B
 Article number: 31-071 532

Refill titration solution
 Article number: 31-071 533

Verification: Sulfate

CALDUR®-Test set sulfate 10 mg/l SO₄²⁻

Measured value per drop: 10 mg/l SO₄²⁻

Analysis duration: 2 min
 Determinations: 30
 Description: 2 reagents (1 reagent, 1 titration solution, 1 ion exchanger) precipitation titration

Hinged lid box
 Article number: 31-071 570

Refill
 Article number: 31-071 571

Refill reagent
 Article number: 31-071 572

Refill ion exchanger
 Article number: 31-071 573

Refill titration solution
 Article number: 31-071 574



CALDUR®-Test set sulfate 20 mg/l SO₄²⁻

Measured value per drop: 20 mg/l SO₄²⁻

Analysis duration: 2 min
 Determinations: 30
 Description: 2 reagents (1 reagent, 1 titration solution, 1 ion exchanger) precipitation titration

Hinged lid box
 Article number: 31-071 580

Refill
 Article number: 31-071 581

Refill reagent
 Article number: 31-071 572

Refill ion exchanger
 Article number: 31-071 573

Refill titration solution
 Article number: 31-071 574



Verification: Sulfite

CALDUR®-Test set sulfite T

Measured value per drop: 5 mg/l SO₃²⁻

Analysis duration: 1 min
 Determinations: 100
 Description: 3 reagents (reagent A and B, 1 titration solution) iodometric

Hinged lid box
 Article number: 31-071 585

Refill
 Article number: 31-071 586

Refill reagent A and B
 Article number: 31-071 587

Refill titration solution
 Article number: 31-071 588





The high quality of all test sets of the CALDUR® brand is ensured by the strict requirements for the raw materials and their competent and conscientious processing. The decisive pinch of success is the passion with which the entire team at RLS Wacon manufactures and sells all products. Every test set from CALDUR® contains this passion and quality which ensures that you can analyze your water in the best possible way.

Verification: PM-value

CALDUR®-Test set PM-value

Measured value per drop: 0.5 (0.25)

Analysis duration: 1 min
 Determinations: 100
 Description: 3 reagents
 (m reagent,
 preagent,
 titration solution)
 Acid-base titration

Hinged lid box
 Article number: 31-071 590

Refill
 Article number: 31-071 591



Verification: pH-value

Test sticks pH 0-14

Increments of 1

Analysis duration: approx. 1 min
 Determinations: 100
 Article number: 31-079 240



Test sticks pH 7-14

Gradation in 0.5 increments

Analysis duration: approx. 1 min
 Determinations: 100
 Article number: 31-079 242



Verification: Nitrate/Nitrite

Test sticks nitrate / nitrite

Gradation nitrate 0/10/25/50/100/250/500

Gradation nitrite 0/1/5/10/20/40/80

Analysis duration: approx. 1 min
 Determinations: 100
 Description: The test strips contain both parameters. Both parameters are determined simultaneously.

Article number: 31-075 220





With the colorimetric test kits ...

... the reagent is placed in a water sample. After the reaction time, the measurement result is determined by comparison with a colour chart consisting of six colour fields.

For that place the test tube in the respective white cut-out in the middle of the colour fields. Compare the colour of the sample from above with the adjacent colour of the colour fields.

CALDUR®-Test set aluminium

Aluminium (0.05 - 2 mg/l Al)

Analysis duration: 8 min
 Determinations: 150
 Description: 3 reagents
 Hinged lid box Article number: 31-072 200
 Folded box Article number: 31-072 201



CALDUR®-Test set ammonium

Ammonium (0.1 - 10 mg/l NH_4^+)

Analysis duration: 8 min
 Determinations: 100
 Description: 3 reagents
 Hinged lid box Article number: 31-072 210
 Folded box Article number: 31-072 211



CALDUR®-Test set ascorbic acid

Ascorbic acid (0.1 - 10 mg/l $C_6H_8O_6$)

Analysis duration: 3 min
Determinations: 100
Description: Ferrozine,
2 reagents

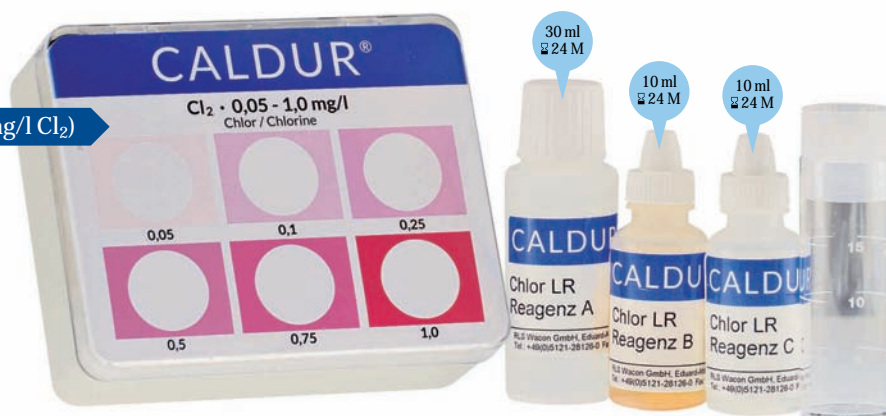
Hinged lid box
Article number: 31-072 220

Refill
Article number: 31-072 221

CALDUR®-Test set chlorine LR

Chlorine LR - free + bound (0.05 - 1.0 mg/l Cl_2)

Analysis duration: 1 min
Determinations: 150
Description: DPD, 3 reagents
Hinged lid box
Article number: 31-072 250
Refill
Article number: 31-072 251



CALDUR®-Test set chlorine (free)

Chlorine - free (0.05 - 1.0 mg/l Cl_2)

Analysis duration: 1 min
Determinations: 150
Description: DPD, 2 reagents

Hinged lid box
Article number: 31-072 240

Refill
Article number: 31-072 241

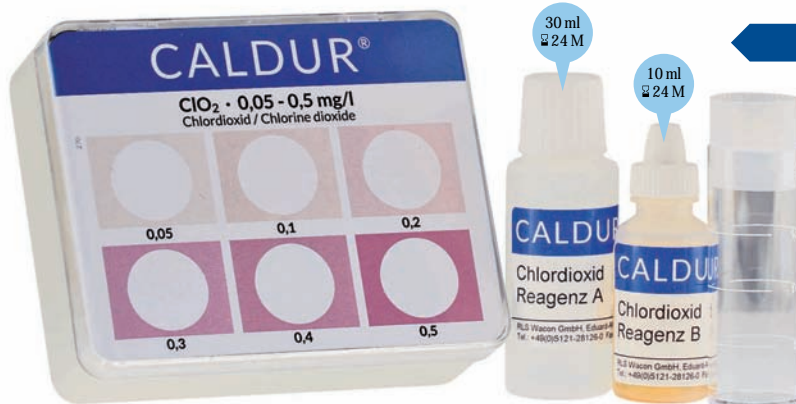
CALDUR®-Test set chlorine HR

Chlorine HR - free + bound (0.1 - 2.0 mg/l Cl_2)

Analysis duration: 1 min
Determinations: 150
Description: DPD, 3 reagents
Hinged lid box
Article number: 31-072 255
Refill
Article number: 31-072 256



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CALDUR®-Test set chlorine dioxide
Chlorine dioxide (0.05 - 0.5 mg/l Cl₂)

Analysis duration:	1 min
Determinations:	140
Description:	DPD, 2 reagents (chlorine dioxide)
Hinged lid box	
Article number:	31-072 270
Refill	
Article number:	31-072 271

CALDUR®-Test set chlorine /chlorine dioxide

Chlorine / chlorine dioxide (0.05 - 0.5 mg/l Cl₂)

Analysis duration: 1 min
Determinations: 150
Description: DPD, 3 reagents (chlorine dioxide or chlorine dioxide + chlorine)

Hinged lid box
Article number: 31-072 275
Refill
Article number: 31-072 276

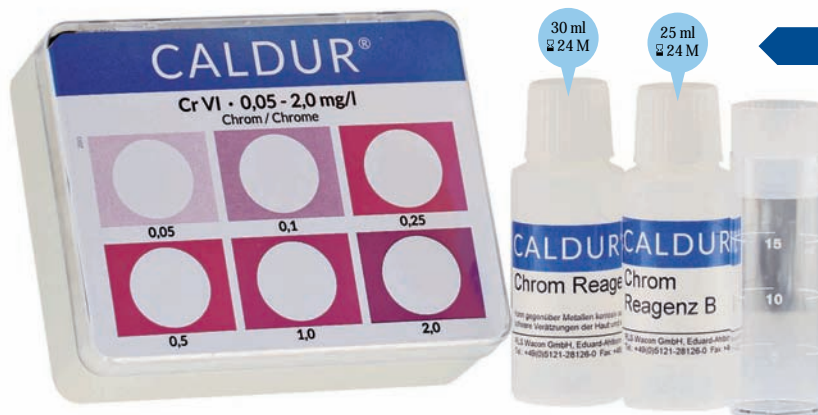


CALDUR®-Test set chromium

Chromium (0.05 - 2.0 mg/l)

Analysis duration: 5 min
Determinations: 150
Description: Diphenylcarbazide, 2 reagents

Hinged lid box
Article number: 31-072 280
Refill
Article number: 31-072 281



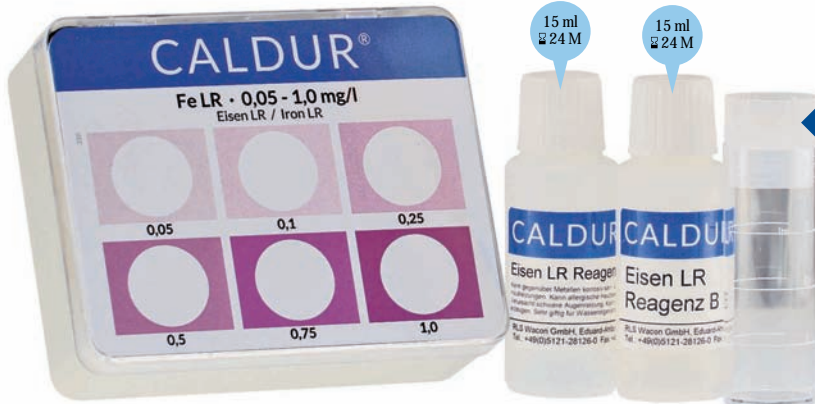
CALDUR®-Test set DEHA

DEHA (0.05 - 1.0 mg/l DEHA)

Analysis duration: 5 min
Determinations: 100
Description: Ferrozine, 2 reagents

Hinged lid box
Article number: 31-072 300
Refill
Article number: 31-072 301





CALDUR®-Test set iron LR

Iron LR (0.05 - 1.0 mg/l Fe)

Analysis duration: 4 min
Determinations: 150
Description: Ferrozine,
2 reagents

Hinged lid box
Article number: 31-072 310

Refill
Article number: 31-072 311

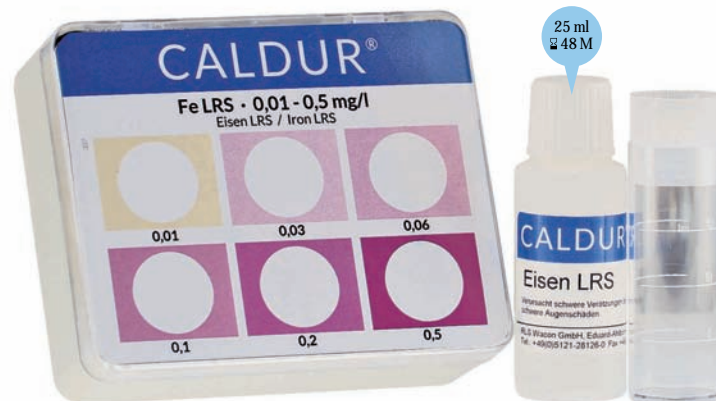
CALDUR®-Test set iron LRS

Iron LRS (0.01 - 0.5 mg/l Fe)

Analysis duration: 5 min
Determinations: 100
Description: Ferrozine,
1 reagent

Hinged lid box
Article number: 31-072 307

Refill
Article number: 31-072 308



CALDUR®-Test set iron HRS

Iron HRS (0.2 - 10 mg/l Fe)

Analysis duration: 4 min
Determinations: 150
Description: O-phenanthroline,
1 reagent

Hinged lid box
Article number: 31-072 630

Refill
Article number: 31-072 631



CALDUR®-Test set copper

Copper (0.05 - 2.0 mg/l Cu)

Analysis duration: 5 min
Determinations: 100
Description: Cuprizone,
2 reagents

Hinged lid box
Article number: 31-072 320

Refill
Article number: 31-072 321





CALDUR®-Test set manganese

Manganese (0.03 - 1.0 mg/l Mn)

Analysis duration: 10 min
 Determinations: 100
 Description: Formaldoxime, 3 reagents
 Hinged lid box
 Article number: 31-072 360
 Refill
 Article number: 31-072 361

CALDUR®-Test set MEKO

MEKO (0.5 - 10 mg/l MEKO)

Analysis duration: 8 min
 Determinations: 100
 Description: Ferrozine, 2 reagents
 Hinged lid box
 Article number: 31-072 400
 Refill
 Article number: 31-072 401



CALDUR®-Test set nitrate

Nitrate (1 - 50 mg/l NO_3^-)

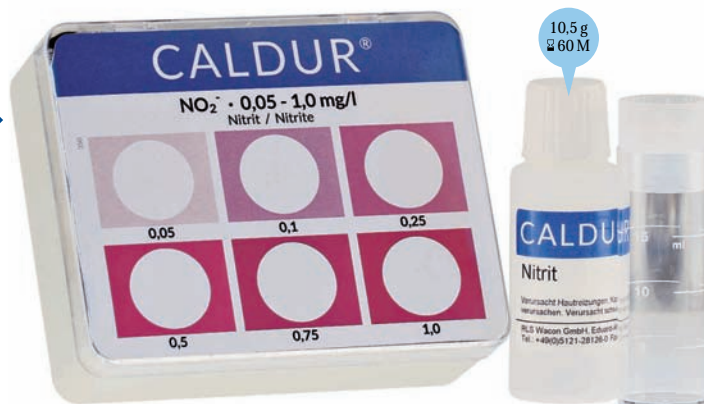
Analysis duration: 6 min
 Determinations: 200
 Description: NED, 2 reagents
 Hinged lid box
 Article number: 31-072 340
 Refill
 Article number: 31-072 341

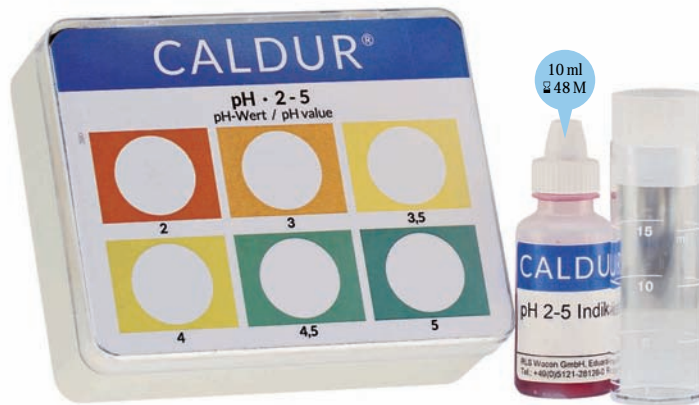


CALDUR®-Test set nitrite LR

Nitrite (0.05 - 1 mg/l NO_2^-)

Analysis duration: 5 min
 Determinations: 200
 Description: NED, 1 reagent
 Hinged lid box
 Article number: 31-072 350
 Refill
 Article number: 31-072 351





CALDUR®-Test set pH 2-5

pH 2-5 (2 - 5 pH)

Analysis duration: 1 min
 Determinations: 300
 Description: Mixed reagent, 1 reagent

Hinged lid box
 Article number: 31-072 380

Refill
 Article number: 31-072 381

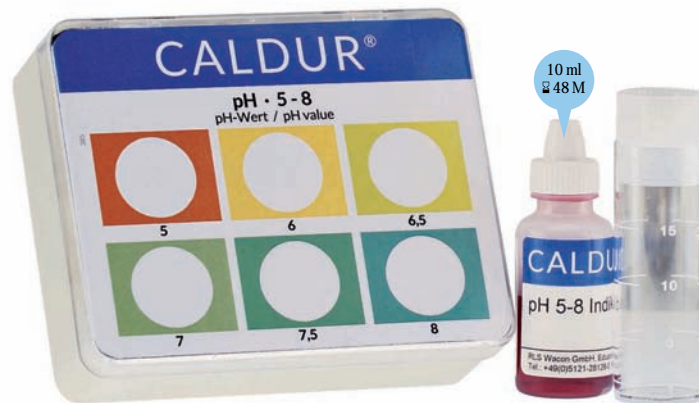
CALDUR®-Test set pH 5-8

pH 5-8 (5 - 8 pH)

Analysis duration: 1 min
 Determinations: 300
 Description: Mixed reagent, 1 reagent

Hinged lid box
 Article number: 31-072 385

Refill
 Article number: 31-072 386



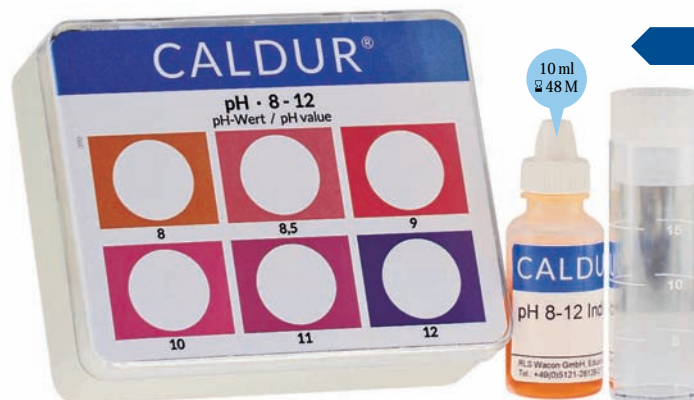
CALDUR®-Test set pH 8-12

pH 8-12 (8 - 12 pH)

Analysis duration: 1 min
 Determinations: 300
 Description: Mixed reagent, 1 reagent

Hinged lid box
 Article number: 31-072 390

Refill
 Article number: 31-072 391



CALDUR®-Test set pH / chlorine (free)

pH (6.8 / 7.4 / 8.0 pH)

Analysis duration: 1 min
 Determinations: 50
 Description: Phenol red, 1 reagent

Chlorine free (0.1 / 0.5 / 1.0 mg/l Cl₂)

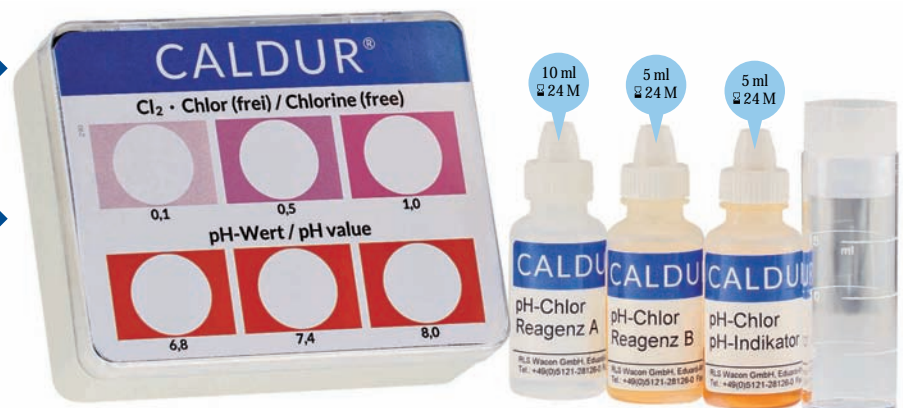
Analysis duration: 1 min
 Determinations: 50
 Description: DPD, 2 reagents (chlorine A + B)

Hinged lid box
 Article number: 31-072 290

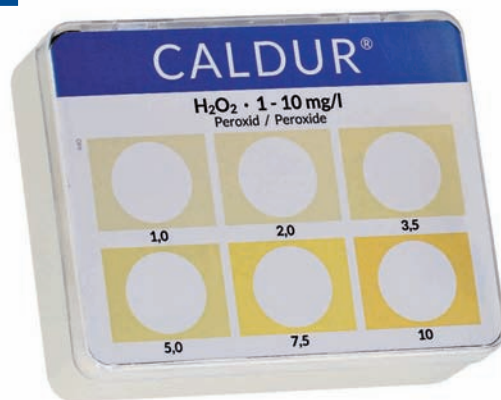
Refill
 Article number: 31-072 291

Refill pH bath
 Article number: 31-072 393

Refill chlorine A + B
 Article number: 31-072 293



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CALDUR®-Test set peroxide

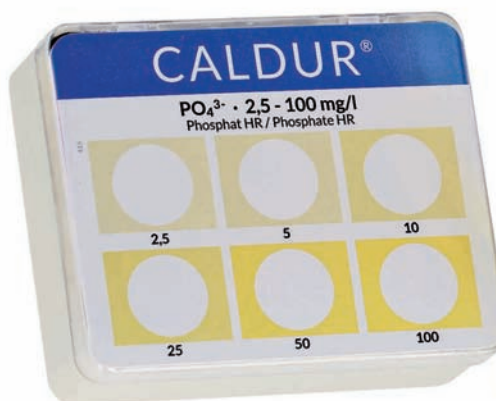
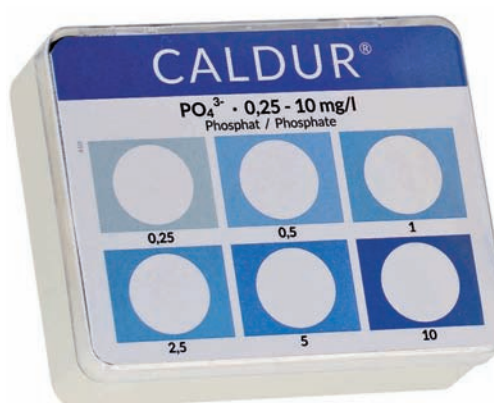
Peroxide (1.0 - 10 mg/l H_2O_2)

Analysis duration:	5 min
Determinations:	150
Description:	Titanyl sulfate, 2 reagents
Hinged lid box	
Article number:	31-072 440
Refill	
Article number:	31-072 441

CALDUR®-Test set phosphate LR

Phosphate (0.25 - 10 mg/l PO_4^{3-})

Analysis duration:	5 min
Determinations:	200
Description:	Molybdate, 2 reagents
Hinged lid box	
Article number:	31-072 410
Refill	
Article number:	31-072 411



CALDUR®-Test set phosphate HR

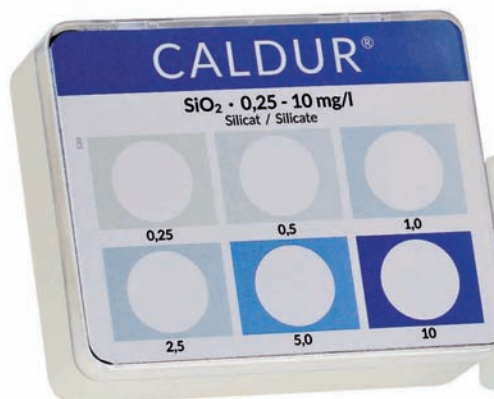
Phosphat HR (2.5 - 100 mg/l PO_4^{3-})

Analysis duration:	1 min
Determinations:	100
Description:	Molybdate, 1 reagent
Hinged lid box	
Article number:	31-072 415
Refill	
Article number:	31-072 416

CALDUR®-Test set silicate

Silicate (0.25 - 10 mg/l SiO_2)

Analysis duration:	8 min
Determinations:	100
Description:	Molybdate, 3 reagents
Hinged lid box	
Article number:	31-072 520
Refill	
Article number:	31-072 521





With the colorimetric CALDUR® test sets the concentration of the water substance to be tested is determined by comparing the water sample with reference colour fields.

To determine the value as accurately as possible, you should take notice of the following:

- The water sample should be clear and free of bubbles.
- Add the described amount of reagent to the water sample.
- Wait the specified time for the colour to develop accordingly.
- Place the test tube on the colour chart, choosing the colour that fits best at first glance.
- Position the test tube in the round white field, looking vertically from the top of the water sample and compare the colour of the water with the adjacent colour. Make sure that there is nothing below the test tube and that the white field is clean.
- Repeat the previous step with the adjoining fields to set the value as to determine exactly.



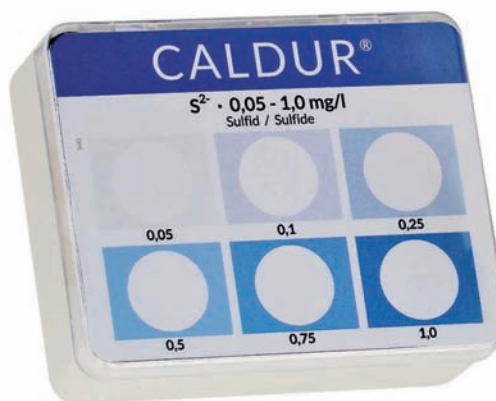
CALDUR®-Test set sulfide

Sulfide (0.05 - 1.0 mg/l S²⁻)

Analysis duration: 7 min
Determinations: 100
Description: DPD,
2 reagents

Hinged lid box
Article number: 31-072 540

Refill
Article number: 31-072 541



CALDUR®-Test set sulfite

Sulfite (0.5 - 20 mg/l SO₃²⁻)

Analysis duration: 3 min
Determinations: 150
Description: Thiobenzoic acid,
2 reagents

Hinged lid box
Article number: 31-072 530

Refill
Article number: 31-072 531

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The photometric test kits ...

... from CALDUR® are especially adapted to the WINLAB Data Line Photometer. In this range of the CALDUR® program the high quality of the reagents is perfectly combined with the automatic determination of the concentration of water substances. This allows you to perform your analyses very reliably and objectively.

In addition to the complete range of chemicals, you can also obtain the photometer from us.

The advantages of the WINLAB Data Line Photometer:

- wide spectral range from 380 to 810 nm
- high photometric precision
- applicable with CALDUR® test sets
- method memory for 150 calibration curves
- working instructions for the reagents can be read from the display
- complete documentation via data logger
- including the documentation software
- robust, field-tested new housing, waterproof
- display with backlight
- display cover made of scratch-resistant glass

WINLAB Data Line photometer in case

Article number: 37-000 100



Technical data

Optics	LED and filter
Wavelengths	380 / 430 / 470 / 500 / 520 / 560 / 610 / 700 / 810 nm
Absorbance range	-0.500 to 3.000
Electro-optical accuracy	in the range from -0.100 to 2.000 1.5 % of reading
Photometric accuracy	± 3 % (on filter)
Language selection, operating text	German / English / Spanish / French or two further languages such as Polish or Italian
Memory	for up to 150 calibration curves including operating texts
Interface	IrDA, as an infrared interface
Data record memory	up to 1000 data records
Display	128 x 64 pixels, size of the reading field 60 x 40 mm, backlit, with scratch-resistant mineral glass cover
Date/time	with calendar and time (automatic summer/winter time changeover)
Power supply	4 rechargeable batteries of 1.25 V (rechargeable with charger)
Power saving function	automatic shutdown at the selected shutdown time



CALDUR®-Test set aluminium

Aluminium (0.02 - 0.3 mg/l Al)

Analysis duration: 8 min
 Determinations: 100
 Description: 3 reagents
 Article number: 31-073 202
 Refill
 Article number: 31-073 201



CALDUR®-Test set ammonium

Ammonium (0.1 - 3 mg/l NH₄⁺)

Analysis duration: 8 min
 Determinations: 150
 Description: 3 reagents
 Article number: 31-073 212
 Refill
 Article number: 31-073 211



CALDUR®-Test set chlorine (free)

Chlorine - free (0.05 - 1.0 mg/l Cl₂)

Analysis duration: 1 min
 Determinations: 150
 Description: DPD,
 2 reagents
 Article number: 31-073 242
 Refill
 Article number: 31-073 241



CALDUR®-Test set chlorine LR

Chlorine LR - free + bound (0.05 - 1.0 mg/l Cl₂)

Analysis duration: 1 min
 Determinations: 150
 Description: DPD,
 3 reagents
 Article number: 31-073 252
 Refill
 Article number: 31-073 251



CALDUR®-Test set chlorine HR

Chlorine HR (0.1 - 2.0 mg/l Cl₂)

Analysis duration: 1 min
 Determinations: 150
 Description: DPD,
 3 reagents
 Article number: 31-073 257
 Refill
 Article number: 31-073 256



CALDUR®-Test set chlorine dioxide

Chlorine dioxide (0.05 - 0.5 mg/l Cl₂)

Analysis duration: 1 min
 Determinations: 140
 Description: DPD,
 2 reagents
 Article number: 31-073 272
 Refill
 Article number: 31-073 271



CALDUR®-Test set chromium

Chromium (0.02 - 0.7 mg/l Cr)

Analysis duration: 5 min
 Determinations: 150
 Description: Diphenylcarbazide,
 2 reagents
 Article number: 31-073 282
 Refill
 Article number: 31-073 281



CALDUR®-Test set iron LRS

Iron LRS (0.01 - 0.5 mg/l Fe)

Analysis duration: 5 min
 Determinations: 100
 Description: Ferrozine,
 1 reagent
 Article number: 31-073 309
 Refill
 Article number: 31-073 308



CALDUR®-Test set iron LR

Iron LR (0.2 - 2.0 mg/l Fe)

Analysis duration: 4 min
 Determinations: 150
 Description: Ferrozine,
 2 reagents
 Article number: 31-073 312
 Refill
 Article number: 31-073 311





CALDUR®-Test set copper

Copper (0.05 - 2.0 mg/l Cu)

Analysis duration: 5 min
Determinations: 100
Description: Cuprizone,
2 reagents
Article number: 31-073 322
Refill
Article number: 31-073 321



CALDUR®-Test set nitrite

Nitrite (0.02 - 1.0 mg/l NO₂⁻)

Analysis duration: 5 min
Determinations: 200
Description: NED,
1 reagent
Article number: 31-073 352
Refill
Article number: 31-073 351



CALDUR®-Test set manganese

Manganese (0.05 - 2.0 mg/l Mn)

Analysis duration: 10 min
Determinations: 100
Description: Formaldoxime,
3 reagents
Article number: 31-073 362
Refill
Article number: 31-073 361



CALDUR®-Test set peroxide

Peroxide (1.0 - 100 mg/l H₂O₂)

Analysis duration: 5 min
Determinations: 150
Description: Titanyl sulfate,
1 reagent
Article number: 31-073 442
Refill
Article number: 31-073 441



CALDUR®-Test set molybdenum

Molybdenum (2.5 - 100 mg/l Mo)

Analysis duration: 4 min
Determinations: 120
Description: Thioglycolic acid,
1 reagent
Article number: 31-073 672
Refill
Article number: 31-073 671



CALDUR®-Test set phosphate

Phosphate (0.1 - 5 mg/l PO₄³⁻)

Analysis duration: 5 min
Determinations: 200
Description: Molybdate,
2 reagents
Article number: 31-073 412
Refill
Article number: 31-073 411



CALDUR®-Test set phosphate HR

Phosphate HR (2.5 - 100 mg/l PO₄³⁻)

Analysis duration: 1 min
Determinations: 100
Description: Molybdate,
1 reagent
Article number: 31-073 417
Refill
Article number: 31-073 416



CALDUR®-Test set nitrate

Nitrate (0.5 - 50 mg/l NO₃⁻)

Analysis duration: 6 min
Determinations: 200
Description: NED,
2 reagents
Article number: 31-073 342
Refill
Article number: 31-073 341



CALDUR®-Test set silicate

Silicate (0.1 - 10 mg/l SiO₂)

Analysis duration: 8 min
Determinations: 100
Description: Molybdate,
3 reagents
Article number: 31-073 522
Refill
Article number: 31-073 521





WINLAB's Data Line Photometer is already calibrated for the reagents of the CALDUR® series. This allows you to determine the water substances of your sample very comfortably and reliably.

The instruments are used in the laboratory as well as on road and facilitate regular checks in an experienced working environment.

CALDUR®-Test set sulfide

Sulfide (0.05 - 1.0 mg/l S²⁻)

Analysis duration: 7 min
Determinations: 100
Description: DPD,
2 reagents
Article number: 31-073 542
Refill
Article number: 31-073 541



CALDUR®-Test set sulfite

Sulfite (0.5 - 10 mg/l SO₃²⁻)

Analysis duration: 3 min
Determinations: 150
Description: Thiobenzoic acid,
2 reagents
Article number: 31-073 532
Refill
Article number: 31-073 531



 CALDUR®



The pH testers from Hanna Instruments ...

... combine performance and user friendliness in pocket size. The two handy testers pHep®4 and eHep®5 are equipped with a 100% waterproof and floatable housing, an exchangeable electrode with

textile diaphragm and an integrated temperature sensor. They guarantee quick and safe measurements on site and in the laboratory. pH value and temperature are shown simultaneously on the display.

pH tester	pHep®4	pHep®5
Article number	30-078 140	30-078 150
Measuring range pH	-2.0 to 16.0 pH	
Measuring range temperature	-5.0 to 60.0 °C	
Resolution pH	0.1 pH	0.01 pH
Temperature resolution	0.1 °C	
Accuracy (at 20 °C) pH	± 0.1 pH	± 0.05 pH
Accuracy (at 20 °C) temperature	± 0.5 °C	
Calibration pH	automatic one- or two-point calibration with two sets of standard buffers (pH 4.01 – 7.01 – 10.01 or 4.01 – 6.86, 9.18)	
Electrode	HI3127	
Power supply	4 x 1.5 V	
Battery life	approx. 300 operating hours automatic switch-off after 8 minutes of non-use	
Dimensions / weight	163 x 40 x 26 mm / 100 g	



CALDUR® storage solution (100 ml)

Article number: 31-078 014



CALDUR® calibration solution pH 7,01 (100 ml)

Article number: 31-078 011



CALDUR® conductivity sol. 1413 µS/cm (100 ml)

Article number: 31-078 015



CALDUR® calibration solution pH 4,01 (100 ml)

Article number: 31-078 012



CALDUR® conductivity sol. 84 µS/cm (100 ml)

Article number: 31-078 016



CALDUR® calibration solution pH 10,01 (100 ml)

Article number: 31-078 013





The conductivity/TDS testers ...

... from Hanna Instruments combine performance and user friendliness. Equipped with a 100% waterproof buoyant housing, an exchangeable electrode and an integrated temperature sensor, they guarantee fast and reliable measurements on site and in the laboratory. Conductivity (TDS) value and temperature are shown simultaneously on the display. TDS stands for Total Dissolved Solids, the sum of dissolved solids in a solution. The TDS value is displayed in ppm (parts per million) or mg/L or ppt (parts per thousands, ‰) or g/L.



Conductivity / TDS tester	DiST®3
Article number	30-078 350
Measuring range conductivity	0 to 3999 $\mu\text{S}/\text{cm}$
Measuring range TDS	0 to 2000 mg/L (ppm)
Measuring range temperature	0.0 to 60.0 °C
Resolution conductivity	1 $\mu\text{S}/\text{cm}$
Resolution TDS	1 mg/L (ppm)
Temperature resolution	0.1 °C
Accuracy (at 20 °C) Leif. / TDS	± 2% of display
Accuracy (at 20 °C) temperature	± 0.5 °C
Calibration	automatic single-point calibration
TDS factor	adjustable from 0.45 to 1.00
Power supply	4 x 1.5 V AA
Battery life	approx. 100 operating hours automatic switch-off after 8 min. of non-use
Dimensions / weight	163 x 40 x 26 mm / 100 g

Conductivity / TDS tester	DiST®5	DiST®6
Article number	30-078 350	30-078 360
Measuring range conductivity	0 to 3999 $\mu\text{S}/\text{cm}$	0.00 to 20.00 $\mu\text{S}/\text{cm}$
Measuring range TDS	0 to 2000 mg/L (ppm)	0.00 to 10.00 g/L (ppt)
Measuring range temperature	0.0 to 60.0 °C	
Resolution conductivity	1 $\mu\text{S}/\text{cm}$	0.01 mS/cm
Resolution TDS	1 mg/L (ppm)	0.01 g/L (ppt)
Temperature resolution	0.1 °C	
Accuracy (at 20 °C) Leif. / TDS	± 2% of display	
Accuracy (at 20 °C) temperature	± 0.5 °C	
Calibration	automatic single-point calibration	
TDS factor	adjustable from 0.45 to 1.00	
Power supply	4 x 1.5 V AA	
Battery life	approx. 100 operating hours automatic switch-off after 8 minutes of non-use	
Dimensions / weight	163 x 40 x 26 mm / 100 g	



CALDUR®



Do you need a special solution?

The CALDUR® program offers a comprehensive range of products for the analysis of water substances. This can be adapted to your needs.

Thanks to the development experience and the competence of RLS Wacon's manufacturing department, we have the best prerequisites to find your individual solution even beyond the CALDUR® standard range.

For example, we have developed a test set that enables manual monitoring of water hardness especially for people with red-green weakness. If the colour change is from red to green (in the small picture on the right) in the commercially available test sets, this is not the case with the test set we have developed. Here, a colour change from red to blue takes place (in the small picture on the left). This can even be recognized by people with red-green weakness.

We also offer test sets with your own design, adapted parameterization or in other filling forms. For example, packaging and printing on bottles and test tubes can be individually designed.

Contact our sales and development team.



CALDUR®-Test set total hardness GH 100 red-blue
Measured value per drop: 1.0 / 0.5 °dH

Analysis duration: 1 min
Determinations: 100 at 10°dH
Description: 1 reagent
complexometric
titration

Hinged lid box
Article number: 31-091 310



Online analysis equipment

The SYCON series' online analyzers monitor total or carbonate hardness fully automatically. In addition to limit value devices, we offer titration devices that measure the ingredients exactly.

Via analog and digital interfaces these analyzers can be easily integrated into complex control systems.



Reagents

We can provide you with the appropriate reagent for your analytical instrument. We will be happy to send you an overview of the available reagents for your SYCON analyzer. In addition to the reagents from RLS Wacon, our product range also includes reagents compatible with analyzers of other manufacturers.



Softening controls

The controls of the HAcon series are used to control back-washable filter systems or ion exchangers in connection with pilot distributors or central control valves.



Sample cooler

In our range you will find cooler that allow samples to be taken for manual analysis. In addition, we also offer pre-cooler for analysis devices. Body and cooling coil are made of stainless steel (type 1.4571) and approved for a nominal pressure up to 16 bar.



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The CALDUR® test sets for the manual determination of water substances round off the analytical product range of RLS Wacon. In addition, RLS Wacon's online analysis devices offer fully automatic monitoring of water substances. The SYCON devices analyze the total and residual hardness in water and have been in industrial use for many years as robust and reliable online analyzers.



 **CALDUR®**