EN / English

Safe Swim®

Water testing, step by step.

For pools & hot tubs

Setup 2-3 / Tests 4-8 / Tables 12-15





486206-IES

Instruction manual

Read before use. Keep this guide with your kit.

Meet your meter

Safe Swim® | Model 486206-IES



Sample cell

Fill completely with 4 mL of sample water.

READ

Starts the test countdown.

MENU

Selects a test. Hold to recall stored readings.

ZERO/ON

Switches on the meter and zeroes the sample.

Cell cover

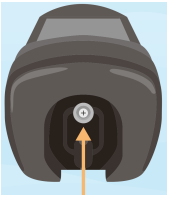
Use when zeroing, reading and mixing.

In your kit

Meter, foam-lined case, brush and manual. Six strips each for free chlorine, combined chlorine, pH, total alkalinity, total bromine and copper. Additional reagents are available separately.

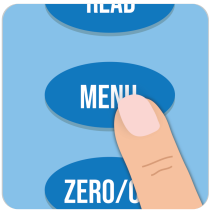
Fit four AAA batteries

Remove the base screw with a Phillips screwdriver. Fit four new AAA batteries as marked. Check that the screw O-ring is attached. Press the base firmly into place and tighten without overtightening. The meter switches on.



Before every test

Prepare your sample before adding any reagent.



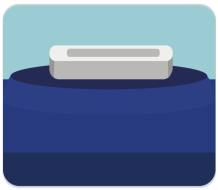
1 Switch on and select

Press **ZERO/ON**, then **MENU** until the test code appears. The number shown afterwards may be an old result, not a new measurement.



2 Rinse and fill

Clean the cell with the brush. Rinse it **three times** with the water to be tested, then fill completely: **4 mL**. Avoid spilling the sample.



3 Cover and zero

Fit the cell cover and press **ZERO/ON**. Wait for zero. Remove the cover only when ready to add the reagent. Use the cover again for the reading.

Testing pH?

Test pH before chlorine and immediately after filling the cell. If testing pH after chlorine, first clean thoroughly with water and the brush. The sample needs **at least 20 ppm total alkalinity**.

Next, follow the method for your test. Cyanuric acid, calcium hardness and phosphate use bR mode, but have their own procedures.

Standard strip tests

Six direct-reading tests. Prepare the sample first: p. 3.

Test	Menu	Reagent
Free chlorine	CL	486637-IES
Total chlorine	CL	486670-IES
pH	PH	486639-II-IES
Total alkalinity	AL	486641-IES
Total bromine	bR	486644-IES
Copper	CU	486632-IES



1 Take one strip

Use the reagent listed above for your test. Close the bottle straight away. Keep the strip clean and dry.



2 Press READ and dip together

Press **READ** as you dip. Move the strip back and forth at **2 strokes per second**, touching the bottom. Do not bend it or spill water. Remove at **1**, before dashes appear, and discard.



3 Cover, read and clean

Replace the cover immediately. Read after the countdown; the result saves automatically. Empty, rinse promptly and brush clean. For another sample, press **MENU** once and prepare again.

Water above 35°C

For free/total chlorine, pH, alkalinity and bromine: remove the strip at **10**, then press **READ** again.

Copper below 20°C

After the first result, press **READ** again. Add no new strip. Wait another 20 seconds and use the **new result**.

Three chlorine results

Free, combined, then total chlorine. Keep the same sample.

CL | DPD-1: 486637-IES + DPD-3: 486638-IES



1 Measure free chlorine

Select **CL** and prepare (p. 3). Test with **DPD-1** using the standard method (p. 4). Record free chlorine and **keep the same sample**.



2 Keep the water. Zero again.

Do not empty or refill the cell. With the same water still in it, press **ZERO/ON** and wait for zero.



3 Add the combined-chlorine strip

Take one **DPD-3** strip and close the bottle. Press **READ** and dip together. Stir at 2 strokes per second. Remove at 1 before dashes, discard and replace the cover.



4 Read combined chlorine

The next result is **combined chlorine**. It saves automatically. No manual subtraction is needed.



5 Press READ once more

Total chlorine appears within about one second. Record it. Now discard the sample, rinse promptly and brush clean.

Above 35°C: both strip stages

For each strip, remove at **10** and press **READ** again. Cover the cell for zeroing and readings.

Cyanuric acid

Liquid reagent. Convert the displayed reading with table A.

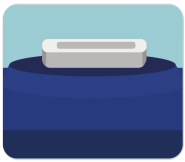
bR | 481652-III-IES | 6-120 ppm

60 s	40 s	0	READ + 20 s
Start mixing	Stand upright	Press READ	Convert TR



1 Prepare and add 8 drops

Select **bR** and prepare (p. 3). Shake the CY-III bottle. Hold it upright and add **8 drops**. Fit the mixing cover.



2 Mix for the first 20 seconds

Start an external **60-second** timer. Hold the cover with your thumb and repeatedly turn the meter upside down until **40 seconds remain**. Then stand it upright on a table.



3 Wait, then press READ

When the external timer reaches **0**, press **READ**. Wait for the meter's further **20-second** countdown.



4 Convert and finish

The display shows **TR, not cyanuric acid concentration**. Use **table A (p. 12)**; choose the nearest listed TR if needed. Empty the cell, rinse promptly and brush clean.

Calcium hardness

Use bR mode, then convert the reading with table B.

bR | 486629-IES | 20-700 ppm as $CaCO_3$



1 Prepare in bR mode

Select **bR** and prepare (p. 3). Take one calcium hardness strip and close the bottle.



2 Press READ and dip together

Press **READ** as you dip. Move at **2 strokes per second**, touching the bottom. **Do not bend**, even if some pads are not underwater. Avoid spilling. Remove at **1** before dashes and discard.



3 Cover and read TR

Replace the cover immediately and wait for the result. The displayed reading is **TR, not calcium hardness**.



4 Convert and clean

Use **table B (p. 13-14)** for calcium hardness in ppm as $CaCO_3$. Choose the nearest listed TR if needed. Empty, rinse promptly and brush clean.

Water above 35°C

Remove the strip at **10**, then press **READ** again. This shorter dip is not the phosphate procedure.

Phosphate

Use an external timer, then convert with table C.

bR | 486814-IES | 0.08-3 ppm as PO_4

120 s	100 s	0	READ + 20 s
Start and dip	Remove; cover	Press READ	Convert TR



1 Prepare the sample

Select **bR** and prepare (p. 3). Take one phosphate strip and close its bottle.



2 Start 120 seconds and dip

Start an external **120-second** timer and dip the strip together. Move at **2 strokes per second**, touching the bottom. Do not bend the strip or spill water.



3 At 100 seconds remaining

After the first 20 seconds, remove and discard the strip. Fit the cell cover. Leave the sample until the external timer reaches **0**.



4 Now press READ

At **0**, press **READ**. Wait for the meter's further **20-second** countdown. The display shows **TR, not phosphate concentration**.



5 Convert and clean

Use **table C (p. 15)**. If TR is not listed, use the nearest value. Read phosphate in ppm as PO_4. Empty, rinse promptly and brush clean.

Care & memory

A clean cell and careful handling help you get reliable results.

After every test

Discard the sample promptly, rinse the cell and clean with the brush. Wipe spills immediately and dispose of used strips properly; wet DPD chemistry can stain surfaces.



If DPD stains the cell

Rinse thoroughly. Fill with water, add **two drops of bleach (5–8%)**, and brush until the stain is removed. Avoid bleach contact with eyes and clothing. Rinse thoroughly afterwards.

Protect your reagents

Close each bottle immediately. Use every strip once only. Discard unusually narrow or wide strips. Use the specified Safe Swim reagents, not other manufacturers' tablets, powders or liquids.

Before storage

Dry the meter exterior and inside the mixing cover. Keep out of direct sunlight and away from chemical storage. Minimise heat above **32°C**. Remove batteries for long storage.

Recall your readings

Select the menu, then **hold MENU**. Readings run from **-20** (newest) to **-01** (oldest). Release to stop. Each menu stores 20 readings: **100 in total**.

The meter switches off automatically after 5 minutes. Chlorine results share CL memory. Advanced tests share bR memory; their displayed readings still need the correct conversion table.

Messages & safe use

Check the message and the stage of the test.

Dim or unresponsive screen

Replace the batteries.

LO while zeroing

Check batteries and clean the cell. A cloudy sample may require dilution or filtration. Contact ITS Europe for the correct method if needed; a faulty LED requires support.

HI while reading

Result above the detection range. Repeat the test to check. For advanced tests, use the relevant conversion table.

LO while reading

Result below the detection range. Repeat the test to check. For pH: below 6.4; HI means above 8.4.

LO, then Err

Combined-chlorine procedure error. Repeat the full sequence carefully using the same sample.

HI, then Err

Combined chlorine above the detection limit. Repeat; the source method advises dilution and retesting. Contact ITS Europe for dilution guidance.

Handle reagents carefully

Read the reagent label before use. Keep reagents out of reach of children. Do not bend multi-pad strips, even when some pads are above the water. Keep the sample in the cell while stirring.

Note the test, reagent number, displayed message and test stage, then contact ITS Europe. Do not treat an old stored reading as a new test result.

Tests & reagent refills

Choose the correct Safe Swim reagent for each test.

Parameter / menu	Reagent reference	Range	Tests
Free chlorine CL	486637-IES	0.00-12.0	100
Combined chlorine CL	486638-IES	0.00-12.0	100
Total chlorine CL	486670-IES	0.00-12.0	100
pH PH	486639-II-IES	6.4-8.4	100
Total alkalinity AL	486641-IES	20-200	100
Total bromine bR	486644-IES	0.00-17.0	100
Copper CU	486632-IES	0.00-8.0	50
Cyanuric acid bR	481652-III-IES	6-120	60
Calcium hardness bR	486629-IES	20-700	50
Phosphate bR	486814-IES	0.08-3.0	50

Ranges in ppm (mg/L), except pH. Calcium hardness: as $CaCO_3$. Phosphate: as PO_4. Test counts refer to refill packs, not the starter quantities.

Combined chlorine needs DPD-1 first. Total chlorine can also be displayed at the end of that sequence. Cyanuric acid, calcium hardness and phosphate require the conversion tables.

Your meter

4 mL cell • 525 nm light source • 11 mm optical path
Four AAA batteries • IP67 • 100 stored readings

A / Cyanuric acid

TR = meter reading. Result = concentration in ppm. Use the nearest listed TR if needed.

TR	ppm	TR	ppm	TR	ppm
0.00	0	1.50	27	3.4	71
0.07	6	1.57	28	3.5	74
0.14	8	1.64	30	3.6	76
0.21	8	1.72	31	3.7	79
0.29	9	1.79	33	3.8	82
0.36	10	1.86	34	3.9	86
0.43	11	1.93	35	4.0	89
0.50	12	2.00	37	4.1	92
0.57	13	2.1	39	4.2	97
0.64	14	2.2	41	4.3	100
0.71	15	2.3	43	4.4	103
0.79	16	2.4	45	4.5	105
0.86	17	2.5	48	4.6	110
0.93	18	2.6	50	4.7	115
1.00	19	2.7	52	4.8	120
1.07	21	2.8	54	4.9	120
1.14	22	2.9	58	5.0	120
1.22	23	3.0	61	...	>120
1.29	24	3.1	63	HI	>120
1.36	25	3.2	66		
1.43	26	3.3	69		

Example: TR 1.64 → 30 ppm cyanuric acid.

Readings above the listed range: >120 ppm.

B / Calcium hardness

TR = meter reading. Result = concentration in ppm. Use the nearest listed TR if needed.

TR	ppm	TR	ppm	TR	ppm
0.14	0	2.4	51	5.4	175
0.21	20	2.5	54	5.5	180
0.29	22	2.6	56	5.6	185
0.36	22	2.7	59	5.7	191
0.43	23	2.8	60	5.8	195
0.50	24	2.9	63	5.9	200
0.57	25	3.0	66	6.0	207
0.64	26	3.1	68	6.1	213
0.71	27	3.2	70	6.2	220
0.79	27	3.3	73	6.3	224
0.86	28	3.4	77	6.4	230
0.93	30	3.5	81	6.5	236
1.00	30	3.6	86	6.6	242
1.07	32	3.7	92	6.7	248
1.14	33	3.8	98	6.8	252
1.22	33	3.9	105	6.9	258
1.29	34	4.0	111	7.0	264
1.36	36	4.1	117	7.1	269
1.43	37	4.2	120	7.2	275
1.50	38	4.3	126	7.3	279
1.57	39	4.4	129	7.4	284
1.64	40	4.5	132	7.5	289
1.72	41	4.6	138	7.6	295
1.79	42	4.7	144	7.7	301
1.86	43	4.8	150	7.8	304
1.93	44	4.9	153	7.9	310
2.00	45	5.0	156	8.0	315
2.1	46	5.1	164	8.1	321
2.2	48	5.2	167	8.2	327
2.3	49	5.3	170	8.3	332

Example: TR 2.7 → 59 ppm as $CaCO_3$.

HI: >700 ppm. The source table lists 17.0 = 673; do not extrapolate the gap to 700.

B / Calcium hardness / continued

TR = meter reading. Result = concentration in ppm. Use the nearest listed TR if needed.

TR	ppm	TR	ppm	TR	ppm
8.4	339	11.4	495	14.4	606
8.5	345	11.5	497	14.5	609
8.6	351	11.6	500	14.6	611
8.7	358	11.7	504	14.7	614
8.8	362	11.8	508	14.8	616
8.9	368	11.9	512	14.9	619
9.0	373	12.0	516	15.0	621
9.1	377	12.1	518	15.1	623
9.2	383	12.2	523	15.2	626
9.3	387	12.3	527	15.3	629
9.4	392	12.4	532	15.4	632
9.5	396	12.5	536	15.5	634
9.6	399	12.6	539	15.6	636
9.7	405	12.7	544	15.7	638
9.8	411	12.8	548	15.8	640
9.9	418	12.9	553	15.9	643
10.0	424	13.0	557	16.0	645
10.1	429	13.1	560	16.1	646
10.2	435	13.2	563	16.2	649
10.3	440	13.3	567	16.3	651
10.4	446	13.4	571	16.4	653
10.5	451	13.5	575	16.5	655
10.6	455	13.6	577	16.6	657
10.7	461	13.7	581	16.7	661
10.8	467	13.8	585	16.8	665
10.9	472	13.9	589	16.9	669
11.0	476	14.0	593	17.0	673
11.1	479	14.1	595	HI	>700
11.2	484	14.2	599		
11.3	489	14.3	603		

Example: TR 2.7 → 59 ppm as $CaCO_3$.

HI: >700 ppm. The source table lists 17.0 = 673; do not extrapolate the gap to 700.

C / Phosphate

TR = meter reading. Result = concentration in ppm. Use the nearest listed TR if needed.

TR	ppm
0.00	**0.08**
0.07	**0.14**
0.14	**0.25**
0.21	**0.30**
0.29	**0.40**
0.36	**0.45**
0.43	**0.56**
0.50	**0.62**
0.57	**0.74**
0.64	**0.80**
0.71	**0.92**
0.79	**0.98**
0.86	**1.05**
0.93	**1.18**
1.00	**1.24**
1.07	**1.38**
1.14	**1.46**

TR	ppm
1.22	**1.53**
1.29	**1.61**
1.36	**1.77**
1.43	**1.85**
1.50	**1.93**
1.57	**2.03**
1.64	**2.21**
1.72	**2.31**
1.79	**2.41**
1.86	**2.52**
1.93	**2.64**
2.00	**2.76**
2.1	**2.94**
2.2	**>3**
...	**>3**
HI	**>3**

Example: TR 1.64 → 2.21 ppm as PO_4.

TR 2.2 and above, or HI: >3 ppm.

Safe Swim®

Here to help.

Instructions, videos and technical support.

Scan for the manufacturer's support page. Online material may not yet be available in every language. All test procedures and conversion tables needed for this guide are printed here.

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Based on Safe Swim manual ENG-R100425-SSEZ. Original device pictures and instructional illustrations retained. Model 486206-IES.