

Принадлежности для проведения испытаний, тестирования CARL ROTH ROTILABO, K5, Aquadur, Ozone, VISOCOLOR, VISOCOLOR, PF-12, QUANTOFIX

Технические характеристики

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Тургут (3462)77-98-35
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
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Череповец (8202)49-02-64
Чита (3022)38-34-83
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Ярославль (4852)69-52-93

Россия (495)268-04-70

Казахстан (772)734-952-31

Киргизия (996)312-96-26-47

Test systems



Colour fan for standard colours RAL K5

ROTH SELECTION.

With **213 colour cards**, matt finish. Contains RAL 840-HR, RAL F 14 colour codes and RAL-F 81 traffic colours.

To precisely describe the colour shades in both paper and thin-layer chromatography and to determine the colour of chemicals, crystalline solids and natural dyes in textile and food colouring.

Type	Art. No.	Pack Qty.	
Colour fan for standard colours	0426.1	1 unit(s)	



Odour strips ROTILABO®

ROTH SELECTION.

For liquids. Made of filter cardboard 240 g/m².

Dimensions: W 6 x L 135 mm, in blocks of 60 strips.

Type	Pack.	Art. No.	Pack Qty.	
Odour strips	5 x 60 strips	1679.1	300 unit(s)	



Test swabs Ozone

ROTH SELECTION.

A simple test to determine the level of ozone in the air.

Application:

The test strip is placed at a location that is sheltered from the wind. Ten minutes later, its colour is then compared to a colour scale.

Verification of	Gradation (µg/m³)	Colour conversion	Art. No.	Pack Qty.	
O ₃	<90, 90–150, 150–210, >210	from white to brown	L828.1	12 unit(s)	



Test swabs Aquadur®

ROTH SELECTION.

Quick test to guide semi-quantitative determination of **water hardness (total hardness)**.

Measuring range of 0 °d to more than 25 °d.

Conversion: 1 °d = 1.8 °f = 1.25 °e = 17.8 mg/l CaCO₃.

One box contains 100 test strips W 6 x L 95 mm.

Application:

The test strip is briefly dipped into the water to be measured. After approximately one minute, the colouring that has appeared can be compared to a colour scale and the hardness range can be determined.

Caution: The test paper must not come into contact with fingers.

Verification of	Gradation	Art. No.	Pack Qty.	
Water hardness (total hardness)	<3 °d, >5 °d, >10 °d, >15 °d, >20 °d, >25 °d	C725.1	100 unit(s)	



Test paper oil

Macherey-Nagel.

For rapidly detecting the presence of oil in water and/or soil. When the pale blue paper comes into contact with hydrocarbons, specifically gasoline, fuel oil, lubricating oil, etc., it turns a dark blue colour.

Technical specifications:

Substance	Colour reaction can be seen immediately (mg/l water)	Colour reaction can be seen clearly (mg/l water)
Petroleum ether (Kp. 40–80 °C)	250	400
Carburettor fuel (Super)	10	25
EL fuel oil	5	10
Lubricating oil	1	5

Verification of	Colour conversion	Art. No.	Pack Qty.	
Oil	pale blue to dark blue	L832.1	100 unit(s)	



Test systems



Test paper

Macherey-Nagel.

For qualitative determination of ions and chemical compounds. The test paper changes colour above a specific detection limit.

Lead acetate paper

On the reel, L 5 m x W 7 mm.

 **Danger** H360D-H412

Verification of	Sensitivity limit	Colour conversion	Art. No.	Pack Qty.	
Hydrogen sulphide (H_2S), Sulphide ions (S^{2-})	5 mg/l S^{2-}	from white to brown/black	AXT4.1	1 roll(s)	

Potassium iodide starch paper

On the reel, L 5 m x W 7 mm.

Verification of	Sensitivity limit	Colour conversion	Art. No.	Pack Qty.	
Nitrite ions (NO_2^-), free chlorine (Cl_2)	1 mg/l NO_2^-	from white to blue-violet	AXT3.1	1 roll(s)	

Phosphatesmo KM

Paper strips, L 30 x W 15 mm.

Verification of	Sensitivity limit	Colour conversion	Art. No.	Pack Qty.	
Sperm, acid phosphatase	in trace amounts	from white to violet	AXT5.1	25 unit(s)	

Plumbtesmo

Paper strips, L 40 x W 25 mm.

Verification of	Sensitivity limit	Colour conversion	Art. No.	Pack Qty.	
Lead (Pb), Lead ions (Pb^{2+})	5 mg/l Pb^{2+}	from white-yellow to pink-red	1252.1	40 unit(s)	

Watesmo

On the reel, L 5 m x W 10 mm.

Verification of	Sensitivity limit	Colour conversion	Art. No.	Pack Qty.	
Water (e.g. water in organic solvents)	in trace amounts	from light blue to dark blue	AXT6.1	1 roll(s)	



Test kit water hardness

ROTH SELECTION.

A 5 ml water sample is added drop by drop as a test reagent until there is a change in colour. Each drop corresponds to 1° dGH.

 **Warning** H290-H319

Delivery incl. sample container.

Verification of	Pack.	Art. No.	Pack Qty.	
Water hardness	2 x 15 ml	0519.1	1 unit(s)	

Test systems



Test swabs QUANTOFIX®

Macherey-Nagel.

For semi-quantitative determination of various substances. The test swabs consist of a 0.2 mm-thick plastic strip with testing paper affixed to the lower end. After the test strip has been moistened, the colouration that appears is compared to a colour scale on the side of the can.

The concentration value can be read or a concentration range can be estimated. Dimensions: W 6 x L 95 mm.

Aluminium

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Aluminium Al ³⁺	0-5-20-50-200-500	L865.1	100 unit(s)

Ammonium

Test strips with additional reagent

Danger H290-H314

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Ammonium NH ₄ ⁺	0-10-25-50-100-200-400	H920.1	100 unit(s)

Ascorbic acid

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Ascorbic acid C ₆ H ₈ O ₆	0-50-100-200-300-500-1000-2000	LT42.1	100 unit(s)

Benzalkonium chloride

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Benzalkonium chloride	0-10-25-50-100-250-500-1000	HNY9.1	100 unit(s)

Carbonate hardness

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Carbonate hardness CO ₃ ²⁻	0-3-6-10-15-20	L863.1	100 unit(s)

Chlorine

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Chlorine Cl ₂	0-1-3-10-30-100	H921.1	100 unit(s)

Chlorine 500

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Chlorine Cl ₂	0-25-50-100-250-500	1EL0.1	100 unit(s)

Chlorine sensitive

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Chlorine sensitive Cl ₂	0-0,1-0,5-1-3-10	HPA0.1	100 unit(s)

Chloride

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Chloride Cl ⁻	0-500-1000-1500-2000 ≥3000	H922.1	100 unit(s)

Cyanide

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Cyanide CN ⁻	0-1-3-10-30	L864.1	100 unit(s)

EDTA

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
EDTA	0-100-200-300-400	LT47.1	100 unit(s)

Iron 100

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Iron 100 Fe ²⁺ /Fe ³⁺	0-2-5-10-25-50-100	L830.1	100 unit(s)

Formaldehyde

Test strips with additional reagent

Danger H290-H314

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Formaldehyde HCHO	0-10-20-40-60-100-200	HPA1.1	100 unit(s)

Potassium

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Potassium K ⁺	0-200-400-700-1000-1500	LT48.1	100 unit(s)

Copper

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Copper Cu ²⁺ /Cu ⁺	0-10-30-100-300	L831.1	100 unit(s)

Molybdenum

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Molybdenum Mo ⁶⁺	0-5-20-50-100-250	P921.1	100 unit(s)

Nickel

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Nickel Ni ²⁺	0-10-25-50-100-250-500-1000	LT49.1	100 unit(s)

Nitrate/nitrite I

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Nitrate NO ₃ ⁻ / nitrite NO ₂ ⁻	NO ₃ ⁻ : 0-5-10-25-50-75-100 mg/l NO ₂ ⁻ : 0-0,5-2-5-10-25-50	HPA2.1	100 unit(s)

Nitrate/nitrite II

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Nitrate NO ₃ ⁻ / nitrite NO ₂ ⁻	NO ₃ ⁻ : 0-10-25-50-100-250-500 mg/l NO ₂ ⁻ : 0-1-5-10-20-40-80	C733.1	100 unit(s)

Nitrite I

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Nitrite NO ₂ ⁻	0-1-5-10-20-40-80	C734.1	100 unit(s)

Nitrite II

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.
Nitrite NO ₂ ⁻	0-100-300-600-1000-2000-3000	LT43.1	100 unit(s)



Test systems

Nitrite/pH

Verification of	Gradation	Art. No.	Pack Qty.	
Nitrite NO ₂ /pH	NO ₂ : 0-1-5-10-20-40-80 mg/l pH: 6,0-6,4-6,7-7,0-7,3-7,6-7,9-8,2-8,4-8,6-8,8-9,0-9,3-9,6	HL20.1	100 unit(s)	

Peracetic acid I

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peracetic acid C ₂ H ₄ O ₃	0-5-10-20-30-50	LT44.1	100 unit(s)	

Peracetic acid II

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peracetic acid C ₂ H ₄ O ₃	0-50-100-200-300-400-500	LT45.1	100 unit(s)	

Peracetic acid III

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peracetic acid C ₂ H ₄ O ₃	0-500-1000-1500-2000	LT46.1	100 unit(s)	

Peroxide I

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peroxide H ₂ O ₂	0-0,5-2-5-10-25	L829.1	100 unit(s)	

Peroxide II

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peroxide H ₂ O ₂	0-1-3-10-30-100	C735.1	100 unit(s)	

Peroxide III

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Peroxide H ₂ O ₂	0-50-150-300-500-800-1000	HPA3.1	100 unit(s)	

Phosphate

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻	0-3-10-25-50-100	H923.1	100 unit(s)	

Sulphate

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Sulphate SO ₄ ²⁻	0->400->800->1200->1600	P922.1	100 unit(s)	

Sulphite

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Sulphite SO ₃ ²⁻	0-10-25-50-100-250-500-1000	C736.1	100 unit(s)	

Zinc

Test strips with additional reagent

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Zinc Zn ²⁺	0-2-5-10-25-50-100	HPA4.1	100 unit(s)	

Tin

Verification of	Gradation (mg/l)	Art. No.	Pack Qty.	
Tin Sn ²⁺	0-10-25-50-100-250-500	L866.1	100 unit(s)	



Test kit VISOCOLOR® alpha

Macherey-Nagel.

The product line covers colorimetric, as well as titrimetric procedures. Using **multicomponent reagents** ensures that **only one reagent is required to determine the presence of a chemical** (two reagents for Cl₂).

Delivery incl. sample container with 5 ml ring marking, dropper bottles or powder flasks with the required reagents, dosing spoon for powder reagents and colour chart.

Ammonium

Danger H290-H314

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ ⁺	0-0,2-0,5-1-2-3	50	X319.1	1 unit(s)	

Carbonate hardness

1 drop = 1 °dGH (corresponds to 18 mg/l CaCO₃)

Warning H226-H319

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Carbonate hardness	1 °dH	100	T361.1	1 unit(s)	

Chlorine

Warning H315-H319

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chlorine Cl ₂	0,25-0,5-1,0-1,5-2,0	150	T362.1	1 unit(s)	

Total hardness

1 drop = 1 °dGH (corresponds to 18 mg/l CaCO₃)

Warning H226-H319-H336

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Total hardness	1 °dH	50	T363.1	1 unit(s)	

Nitrate

Warning H315-H317-H319-H412

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrate NO ₃ ⁻	2-8-15-30-50	100	X320.1	1 unit(s)	

Nitrite

Warning H315

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrite NO ₂ ⁻	0,05-0,10-0,25-0,5-1,0	200	T364.1	1 unit(s)	

Test systems

pH 5.0–9.0

Danger H225

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
pH 5.0–9.0	pH 5,0-5,5-6,0-6,5-7,0-7,5-8,0-8,5-9,0	200	T365.1	1 unit(s)	

Phosphate

Danger H315-H318

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO_4^{3-}	2-5-10-15-20	70	X321.1	1 unit(s)	

Residual hardness

Warning H226-H315-H319

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Residual hardness	0,00-0,04-0,08-0,15-0,30 °dH	200	X322.1	1 unit(s)	



Test kit VISOCOLOR® HE

Macherey-Nagel.

This highly sensitive colorimetric measuring method detects even the smallest concentrations of substances. In conjunction with the use of highly sensitive substances and an optical illusion (double irradiation), there is an **increase in their sensitivity by a factor of between 10 and 100 when compared to other VISOCOLOR® test kits.**

Delivery incl. robust plastic box, the required reagents, a comparator box to hold the ten colour comparison disc and two measuring tubes.

Ammonium

Danger H290-H314

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH_4^+	0-0,02-0,04-0,07-0,10-0,15-0,20-0,30-0,40-0,50	110	T379.1	1 unit(s)	

Free + total chlorine

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Free + total chlorine Cl_2	0-0,02-0,04-0,06-0,10-0,15-0,20-0,30-0,40-0,60	160	T380.1	1 unit(s)	

Cyanide

Danger H226-H314-H332-H334-EUH031

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Cyanide CN	0-0,002-0,004-0,007-0,010-0,015-0,020-0,025-0,030-0,040	55	T381.1	1 unit(s)	

Iron

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Iron Fe	0-0,01-0,02-0,03-0,04-0,05-0,07-0,10-0,15-0,20	300	T382.1	1 unit(s)	

Copper

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Copper Cu^{2+}	0-0,04-0,07-0,10-0,15-0,20-0,25-0,30-0,40-0,50	150	T383.1	1 unit(s)	

Manganese

Danger H226-H290-H302+H312+H332-H314-H317-H335-H336-H351-H371-H373-H400

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Manganese Mn	0-0,03-0,06-0,10-0,15-0,20-0,25-0,30-0,40-0,50	100	T384.1	1 unit(s)	

Nitrite

Warning H290

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrite NO_2^-	0-0,005-0,010-0,015-0,02-0,03-0,04-0,06-0,08-0,10	150	T385.1	1 unit(s)	

Phosphate

Danger H290-H314-EUH031

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO_4^{3-}	0-0,05-0,10-0,15-0,20-0,3-0,4-0,6-0,8-1,0	300	T388.1	1 unit(s)	

Phosphate (DEV)

Method according to the chemical basis of the German standard methods for testing water, waste water and sludge (DEV).

Danger H314

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO_4^{3-}	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,25	100	T387.1	1 unit(s)	



Test systems

Silicon

Danger H315-H318-EUH031

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Silicon Si	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20-0,30	120	T389.1	1 unit(s)	



Test kit VISOCOLOR® ECO

Macherey-Nagel.

The product line covers colorimetric, as well as titrimetric procedures. ECO test kits are suitable for **analysing substances in the water with low limit values, whereby environmentally hazardous and toxic substances are largely eliminated.** Very easy to operate using the pictograms.

Delivery incl. two 20 mm measuring tubes with screw cap, moveable comparator to hold the measuring tubes, colour chart, 5 ml plastic syringe, bottles with the reagents and dosing spoon.

Ammonium

Colorimetric procedure. Suitable for use with PF12 photometer.

Danger H226-H290-H314-H412

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ ⁺	0-0,2-0,3-0,5-0,7-1-2-3	50	T366.1	1 unit(s)	

Calcium

Titrimetric procedure.

1 drop = 5 mg/l

Danger H226-H290-H314-H336

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Calcium Ca ²⁺	5 mg/l	100	X323.1	1 unit(s)	

Carbonate hardness

Titrimetric procedure.

1 drop = 1 °dGH (corresponds to 18 mg/l CaCO₃)

Danger H225

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Carbonate hardness	1 °dH	100	T367.1	1 unit(s)	

Chlorine

Colorimetric procedure. Suitable for use with PF12 photometer.

Warning H315-H319

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chlorine Cl ₂	<0,1-0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0	150	T368.1	1 unit(s)	

Chloride

Colorimetric procedure. Suitable for use with PF12 photometer.

Danger H225-H290-H301+H311+H331-H314-H370-H373-H413

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chloride Cl ⁻	1-2-4-7-12-20-40-60	90	T369.1	1 unit(s)	

Chromium

Colorimetric procedure. Suitable for use with PF12 photometer.

Danger H314

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chromium (VI) Cr	0,02-0,05-0,10-0,15-0,20-0,30-0,40-0,50	140	T370.1	1 unit(s)	

Cyanide

Colorimetric procedure. Suitable for use with PF12 photometer.

Danger H290-H314-H334-EUH031

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Cyanide CN ⁻	0-0,01-0,02-0,03-0,05-0,07-0,10-0,15-0,20	100	X324.1	1 unit(s)	

Cyanuric acid

Colorimetric procedure. Suitable for use with PF12 photometer.

Warning H302-H315-H319

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Cyanuric acid	10-15-20-30-40-60-80-100	100	X325.1	1 unit(s)	

Iron

Colorimetric procedure. Suitable for use with PF12 photometer.

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Iron Fe	0-0,04-0,07-0,10-0,15-0,20-0,30-0,50-1,0	100	T371.1	1 unit(s)	

Total hardness

Titrimetric procedure.

1 drop = 1 °dGH (corresponds to 18 mg/l CaCO₃)

Warning H226-H315-H319

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Total hardness	1 °dH	100	T372.1	1 unit(s)	

Potassium

Colorimetric procedure. Suitable for use with PF12 photometer.

Warning H290-H302-H315-H319

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Potassium K ⁺	2-3-4-6-8-10-15	60	Y556.1	1 unit(s)	

Test systems

Silica

Colorimetric procedure. Suitable for use with PF12 photometer.

 **Danger** H315-H318-EU031

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Silica SiO ₂	0-0,2-0,4-0,6-1,0-1,5-2,0-2,5-3,0	80	Y557.1	1 unit(s)	

Copper

Colorimetric procedure. Suitable for use with PF12 photometer.

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Copper Cu ²⁺	0-0,1-0,2-0,3-0,5-0,7-1,0-1,5	100	T373.1	1 unit(s)	

Manganese

Colorimetric procedure. Suitable for use with PF12 photometer.

    **Danger** H290-H302+H312-H314-H317-H335-H351-H373-H400

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Manganese Mn	0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5	70	Y558.1	1 unit(s)	

Nickel

Colorimetric procedure. Suitable for use with PF12 photometer.

    **Danger** H272-H290-H302-H314-H317-H334-H335

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nickel Ni ²⁺	0-0,1-0,2-0,3-0,5-0,7-0,9-1,2-1,5	150	X326.1	1 unit(s)	

Nitrate

Colorimetric procedure. Suitable for use with PF12 photometer.

 **H411**

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrate NO ₃ ⁻	0-4-10-20-30-50-70-90-120	120	T374.1	1 unit(s)	

Nitrite

Colorimetric procedure. Suitable for use with PF12 photometer.

 **Warning** H290

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrite NO ₂ ⁻	0-0,02-0,03-0,05-0,07-0,1-0,2-0,3-0,5	150	T375.1	1 unit(s)	

pH 4.0 – 9.0

Titrimetric procedure.

 **Danger** H225

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
pH 4.0–9.0	pH 4,0-5,0-6,0-6,5-7,0-7,5-8,0-8,5-9,0	400	T376.1	1 unit(s)	

Phosphate

Colorimetric procedure. Suitable for use with PF12 photometer.

 **Danger** H315-H318

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻	0-0,2-0,3-0,5-0,7-1-2-3-5	80	T377.1	1 unit(s)	

Swimming pool (chlorine + pH value)

Titrimetric procedure.

 **Warning** H315-H319

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
chlorine/pH	Cl ₂ : 0,1-0,2-0,3-0,4-0,6-0,9-1,2-2,0 mg/l pH: 6,9-7,2-7,4-7,6-7,8-8,2	150	T378.1	1 unit(s)	

Sulphide

Colorimetric procedure. Suitable for use with PF12 photometer.

 **Danger** H314-H412

Verification of	Gradation (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphide S ²⁻	0-0,1-0,2-0,3-0,4-0,5-0,6-0,7-0,8	90	Y560.1	1 unit(s)	

Sulphite

Titrimetric procedure.

1 drop = 1 mg/l

 **Warning** H315-H319

Verification of	Gradation	No. measurements	Art. No.	Pack Qty.	
Sulphite SO ₃ ²⁻	1 mg/l	60	Y559.1	1 unit(s)	



Round cuvette test NANOCOLOR®

Macherey-Nagel.

Quick tests for photometric analysis. Reagents and additional reagents are precisely pre-dosed for optimum accuracy and correctness of measured results. Convenient, safe removal of round cuvettes (external diameter 16 mm) from the stable box with coloured pictograms providing step-by-step instructions on the cover. Batch-specific information can be accessed via a 2D bar code on the reverse of the packaging. For example, NANOCOLOR® round cuvette tests are suitable for use with the PF12^{plus} photometer.

Ammonium 3

⚠ **Warning** H302

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ /NH ₃ -N	NH ₄ ⁺ : 0,05-3,00, NH ₃ -N: 0,04-2,30	20	KEK4.1	1 unit(s)	

Ammonium 10

⚠ **Warning** H302

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ /NH ₃ -N	NH ₄ ⁺ : 0,2-10,0, NH ₃ -N: 0,2-8,0	20	KEK5.1	1 unit(s)	

Ammonium 50

⚠ **Warning** H302

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ /NH ₃ -N	NH ₄ ⁺ : 1,0-50,0, NH ₃ -N: 1,0-40,0	20	KEK6.1	1 unit(s)	

Ammonium 100

⚠ **Warning** H302-H315-H319

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ /NH ₃ -N	NH ₄ ⁺ : 5-100, NH ₃ -N: 4-80	20	KEK7.1	1 unit(s)	

Ammonium 200

⚠ **Warning** H302-H315-H319

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Ammonium NH ₄ /NH ₃ -N	NH ₄ ⁺ : 40-200, NH ₃ -N: 30-160	20	KEK8.1	1 unit(s)	

Carbonate hardness 15

Verification of	Measuring range	No. measurements	Art. No.	Pack Qty.	
Carbonate hardness	1,0-15 °d, 0,4-5,4 mmol/l H ⁺	20	KEK9.1	1 unit(s)	

Chloride 50

⚠ ⚠ ⚠ ⚠ **Danger** H225-H290-H301+H311+H331-H314-H370-H373-H413

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chloride Cl ⁻	Cl ⁻ : 0,5-50,0	20	KEL0.1	1 unit(s)	

Chloride 200

⚠ ⚠ ⚠ ⚠ **Danger** H225-H290-H301+H311+H331-H314-H370-H373-H413

Verification of	Measuring range (g/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Chloride Cl ⁻	Cl ⁻ : 0,10-1,00, Cl ⁻ : 5-200	20	KEL1.1	1 unit(s)	

Chlorine/ozone 2

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Chlorine Cl ₂ /Ozone O ₃	O ₃ : 0,05-2,00, Cl ₂ : 0,05-2,50	20	KEL2.1	1 unit(s)	

Chromate 5

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chromate Cr (VI)	Cr: 0.05-2.00	20	KEL3.1	1 unit(s)	

Chromium 2 total

⚠ ⚠ ⚠ **Danger** H272-H302-H315-H317-H319-H334-H335

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Chromium Cr	Cr: 0.05-2.00	20	KEL4.1	1 unit(s)	

CSB 60

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

⚠ ⚠ ⚠ **Danger** H302+H312+H332-H314-H317-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
CSB	O ₂ : 5-60	20	KEL5.1	1 unit(s)	

CSB 160

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

⚠ ⚠ ⚠ **Danger** H302+H312+H332-H314-H317-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
CSB	O ₂ : 15-160	20	KEL6.1	1 unit(s)	

CSB 600

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

⚠ ⚠ ⚠ **Danger** H302+H312+H332-H314-H317-H340-H350-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
CSB	SO ₂ : 50-600	20	KEL7.1	1 unit(s)	

Test systems

CSB 1500

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H302+H312+H332-H314-H317-H340-H350-H360Df-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
CSB	O ₂ : 100–1500	20	KEL8.1	1 unit(s)	

CSB 4000

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H302+H312+H332-H314-H317-H340-H350-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
CSB	O ₂ : 400–4000	20	KEL9.1	1 unit(s)	

CSB 10000

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H302+H312+H332-H314-H317-H340-H350-H360Df-H373-H412

Verification of	Measuring range (g/l)	No. measurements	Art. No.	Pack Qty.	
CSB	O ₂ : 1.0–10.0	20	KEN0.1	1 unit(s)	

Iron 3 + total

Required for determining total metal, digestion reagent NanOx metal (Art. No. KEX2.1).

Danger H314

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Iron Fe	Fe: 0.10–3.00	20	KEN1.1	1 unit(s)	

Hardness 20

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Total hardness, Magnesium Mg ²⁺ , Calcium Ca ²⁺	1,0-20,0 °d, Mg ²⁺ : 5-50, Ca ²⁺ : 10-100	20	KEN2.1	1 unit(s)	

Copper 5 + total

Required for determining total metal, digestion reagent NanOx metal (Art. No. KEX2.1).

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Copper Cu ²⁺	Cu ²⁺ : 0,10-7,00	20	KEN3.1	1 unit(s)	

Nickel 4 + total

Required for determining total metal, digestion reagent NanOx metal (Art. No. KEX2.1).

Danger H272-H290-H314-H317-H334-H335

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nickel Ni ²⁺	Ni ²⁺ : 0.10–7.00	20	KEN5.1	1 unit(s)	

Nitrate 50

Danger H226-H290-H302-H314-H336

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrate NO ₃ /NO ₃ -N	NO ₃ : 2-100, NO ₃ -N: 0,3-22,0	20	KEN6.1	1 unit(s)	

Nitrate 250

Danger H226-H290-H302-H314-H336

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrate NO ₃ /NO ₃ -N	NO ₃ : 20-250, NO ₃ -N: 4-60	20	KEN7.1	1 unit(s)	

Nitrite 2

Warning H319

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrite NO ₂ /NO ₂ -N	NO ₂ : 0,02-1,50, NO ₂ -N: 0,003-0,460	20	KEN8.1	1 unit(s)	

Nitrite 4

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrite NO ₂ /NO ₂ -N	NO ₂ : 0,3-13,0, NO ₂ -N: 0,1-4,0	20	KEN9.1	1 unit(s)	

Peroxide 2

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Peroxide H ₂ O ₂	H ₂ O ₂ : 0.03–2.00	10–19	KEP0.1	1 unit(s)	

Phosphate 1 ortho + total

Block thermostat required for determining total phosphate (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H272-H302-H315-H317-H319-H334-H335

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻ /PO ₄ -P	PO ₄ ³⁻ : 0,2-5,0, P (PO ₄ -P): 0,05-1,50	20	KEP1.1	1 unit(s)	

Phosphate 5 ortho + total

Block thermostat required for determining total phosphate (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H272-H302-H315-H317-H319-H334-H335

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻ /PO ₄ -P	PO ₄ ³⁻ : 0,5-15,0, P (PO ₄ -P): 0,20-5,00	20	KEP2.1	1 unit(s)	



Test systems

Phosphate 15 ortho + total

Block thermostat required for determining total phosphate (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H272-H302-H315-H317-H319-H334-H335

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻ /PO ₄ -P	PO ₄ ³⁻ : 1,0-45,0, P (PO ₄ -P): 0,30-15,00	20	KEP3.1	1 unit(s)	

Phosphate 45 ortho + total

Block thermostat required for determining total phosphate (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H272-H302-H315-H317-H319-H334-H335

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Phosphate PO ₄ ³⁻ /PO ₄ -P	PO ₄ ³⁻ : 15-150, P (PO ₄ -P): 5,0-50,0	20	KEP4.1	1 unit(s)	

Residual hardness 1

Verification of	Measuring range	No. measurements	Art. No.	Pack Qty.	
Residual hardness	0.02–1.00 °d, 0.004–0.180 mmol/l	20	KEP5.1	1 unit(s)	

Total nitrogen TN₂₂

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H226-H272-H290-H302-H314-H317-H334-H335-H336

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrogen N	N: 0.5–22.0	20	KEP6.1	1 unit(s)	

Total nitrogen TN₆₀

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H226-H272-H290-H302-H314-H317-H334-H335-H336

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrogen N	N: 3–60	20	KEP7.1	1 unit(s)	

Total nitrogen TN₂₂₀

Required for determining block thermostat (e.g. NANOCOLOR® VARIO Mini, Art. No. KEX3.1).

Danger H226-H272-H290-H302-H314-H317-H334-H335-H336

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Nitrogen N	N: 5–220	20	KEP8.1	1 unit(s)	

Sulphate LR 200

Warning H302+H332-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphate SO ₄ ²⁻	SO ₄ ²⁻ : 20–200	20	KEP9.1	1 unit(s)	

Sulphate MR 400

Warning H302+H332-H373-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphate SO ₄ ²⁻	SO ₄ ²⁻ : 40–400	20	KET0.1	1 unit(s)	

Sulphate HR 1000

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphate SO ₄ ²⁻	SO ₄ ²⁻ : 200-1000	20	1CA5.1	1 unit(s)	

Sulphide 3

Danger H314-H412

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphide S ²⁻	S ²⁻ : 0.05–3.00	20	KET2.1	1 unit(s)	

Sulphite 10

Warning H302-H373

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphite SO ₃ ²⁻	SO ₃ ²⁻ : 0.2-10.0	20	KET3.1	1 unit(s)	

Sulphite 100

Danger H314

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Sulphite SO ₃ ²⁻	SO ₃ ²⁻ : 5-100	19	KET4.1	1 unit(s)	

Surfactant 4, anionic

Danger H226-H302+H312-H315-H319-H331-H336-H351-H361-H371-H373

Verification of	Measuring range (mg/l, mg/l)	No. measurements	Art. No.	Pack Qty.	
Surfactant, anionic	SDS: 0.20–3.5, MBAS: 0.20-4.00	20	KET5.1	1 unit(s)	

Surfactant 4, cationic

Danger H226-H302+H312-H315-H319-H331-H336-H351-H361-H371-H373

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Surfactant, cationic	CTAB: 0.20-4.00	20	KET6.1	1 unit(s)	

Surfactant 15, non-ionic

Warning H226-H302+H312+H332-H315-H319-H336-H351-H371

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Surfactant ,non-ionic	Triton®X-100: 0.3-15.0	20	KET7.1	1 unit(s)	

Test systems

Zinc 4 + total (with CN)

Required for determining total metal, digestion reagent NanOx metal (Art. No. KEX2.1).



Danger H272-H300+H310+H330-H315-H318-H335-H360FD-H410-EUH032

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Zinc Zn ²⁺	Zn ²⁺ : 0.10-4.00	20	KET8.1	1 unit(s)	

Zinc 6 + total Zinc (CN-free)

Required for determining total metal, digestion reagent NanOx metal (Art. No. KEX2.1).



Warning H302-H315-H319

Verification of	Measuring range (mg/l)	No. measurements	Art. No.	Pack Qty.	
Zinc Zn ²⁺	Zn ²⁺ : 0.20-6.00	20	KET9.1	1 unit(s)	



Photometer PF-12^{Plus} for water experiments

Macherey-Nagel.

Portable photometer for use in the laboratory and the field, with pre-programmed Visocolor[®] ECO and Nanocolor[®] round cuvette tests. Nephelometric turbidity measurement possible (1-1000 NTU).

- Illuminated graphic display
- Automatic wave length setting
- Cuvette rack for round cuvettes, with 16 mm OD
- USB port for data transfer and power supply
- Dust and waterproof casing acc. to IP 68

Technical specifications:

Art. No.	LP73.1
Type	PF-12 ^{Plus}
Optics	Automatic filter wheel with seven interference filters
Light source	Wolfram lamp
Wavelength	345/436/470/540/585/620/690 nm
Accuracy	±2 nm
Photometric range	±3 E
Photometric correctness	±1 %
IP rating	68
Data memory	1000 measured values, GLP-compliant
Port	USB 2.0
L x W x D	215 x 100 x 65 mm
Power supply	Batteries: 4 x 1.5 V AA

Delivery incl. Software DVD, batteries, 4 empty cuvettes, funnel, beaker, syringe, USB cable, calibration cuvette and transport case. If required, please order USB connector separately.

Type	Art. No.	Pack Qty.	
PF-12 ^{Plus}	LP73.1	1 unit(s)	

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
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Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
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Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
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Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
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Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

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Санкт-Петербург (812)309-46-40
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Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
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