

Water Analysis

VISOCOLOR® • VISOCOLOR®



Water analysis made easy

VISOCOLOR® tests for water analysis

- Various measuring methods and detection principles for many parameters
- Visual and photometric determination
- Reagent cases with individual combinations of different test kits

MACHEREY-NAGEL

www.mn-net.com



VISOCOLOR® test kits

VISOCOLOR® tests are compact and flexible test kits, which allow a chemical analysis without additional accessories and without the need for any prior experience. They are suitable for analysis in labs, in school or directly on-site. MACHEREY-NAGEL offers three product lines with different accuracies, precisions and sensitivities for universal use depending on the analytical requirement. For each product line there are colorimetric and titrimetric measuring methods to determine all important water and waste water parameters. The VISOCOLOR® test kits can be sold individually or in stable reagent cases as portable laboratories.

Convenient handling

- Simple chemical-analytical methods
- Instructions in different languages and with pictograms for safe and simple test performance
- Color-coded reagent bottles for clear identification of reagents
- Fast-dissolving reagents save time and facilitate the daily work

Reliable analysis

- Reaction principles based on internationally acknowledged regulations (DIN, EN, ISO)
- Maximum safety for the user and easy disposal
- Low susceptibility to interferences
- Additional increase of accuracy by photometric determination of VISOCOLOR® ECO tests with the photometers PF-12 and PF-3

Unique quality

- VISOCOLOR® color charts are set on the original colors of freshly produced standard solutions
- Finest measurement graduations by true color printing
- Precision and reproducibility by high printing quality

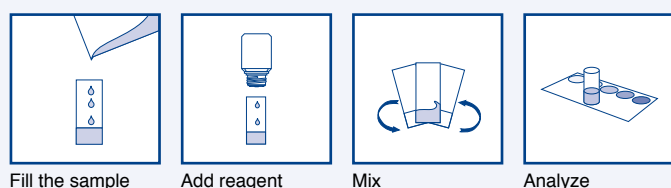


VISOCOLOR® alpha

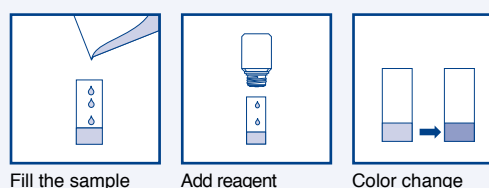
Easy and compact

- Cost-efficient
- Handy packages
- Multicomponent reagents for reducing of required amount of reagent

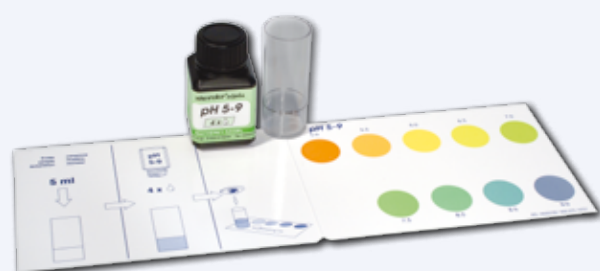
Colorimetry with color chart



Titration with drop counting



Count the drops: 1 Δ = 1 measuring unit

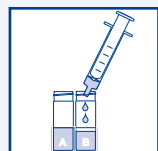


VISOCOLOR® ECO

Accurate and precise

- Sharp color change due to separate indicator and titration solution
- Compensation of turbidity and colors
- Cost-efficient refill packs available

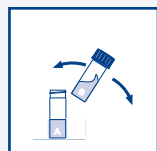
Colorimetry with color chart



Fill the sample



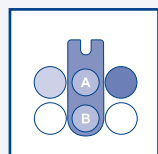
Add reagent



Mix



Wait

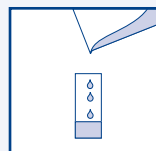


Analyze

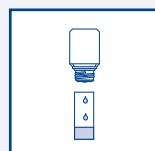
Evaluation with
photometer PF-12 & PF-3



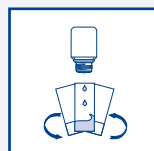
Titration with drop counting



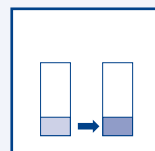
Fill the sample



Add indicator



Add titration solution and mix



Color change

Count the drops: 1 Δ = 1 measuring unit

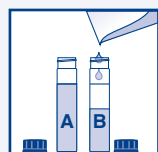


VISOCOLOR® HE

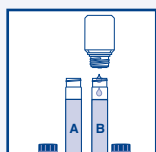
Highest sensitivity and accuracy

- Highest sensitivity (10 to 100 times)
- Narrow gradation and narrowly graduated syringe
- Compensation of turbidity and colors
- Cost-efficient refill packs available

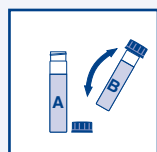
Colorimetry with color comparison disc



Fill sample



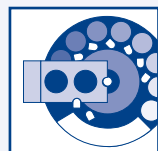
Add reagent



Mix



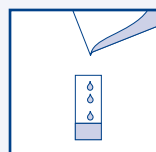
Wait



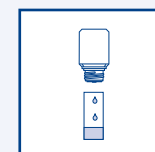
Analyze



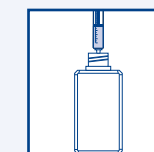
Titration with graduated syringe



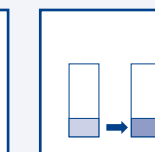
Fill the sample



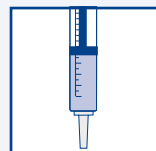
Add indicator



Titration solution



Color change



Analyze



VISOCOLOR® reagent cases

Infinite options

- Rugged cases with premium foam inlays
- With and without photometer PF-12
- Pre-packed or empty cases for individual solutions



Slip lid tubes
for qualitative test papers
and indicator papers
without color scale

**Aluminium tubes and
snap-on lids**
for semi-quantitative and
qualitative test papers, test
strips and pH-Fix PT tubes

Accessories
manuals, color scales
and accessories

Reagent bottles
for VISOCOLOR® alpha,
ECO, HE and QUANTOFIX®

Slid lid tubes
for pH-Fix

Trick lid tubes
for pH indicator papers and
qualitative test papers

VISOCOLOR® reagent case without photometer



VISOCOLOR® reagent case for soil analysis

REF 931 601

- Incl. all reagents, instruments and additional tools to produce soil extracts and determine soil structure, potassium, pH, phosphate, ammonium, nitrite and nitrate

VISOCOLOR® ECO reagent case

REF 931 301

- For determination of ammonium, carbonate hardness, total hardness, nitrate, nitrite, pH and phosphate

VISOCOLOR® ECO reagent case (empty)

REF 931 303

- For individual equipment with 8 different VISOCOLOR® ECO tests

VISOCOLOR® reagent case

REF 931 304

- For determination of alkalinity, ammonium, total hardness, nitrite, pH, phosphate, oxygen, temperature

VISOCOLOR® reagent case (empty)

REF 931 305

- For individual equipment with VISOCOLOR® ECO tests, VISOCOLOR® HE tests, VISOCOLOR® alpha tests, pH indicator papers, pH fix test strips, qualitative and semi-qualitative test papers and test strips

VISOCOLOR® reagent case with photometer PF-12



VISOCOLOR® reagent case "Environmental analysis"

REF 914 303

- For determination of ammonium, carbonate hardness, iron, total hardness, nitrate, nitrite, pH, phosphate incl. photometer PF-12

VISOCOLOR® reagent case with photometer PF-12

REF 914 301

- For individual equipment with VISOCOLOR® ECO tests, VISOCOLOR® HE tests, VISOCOLOR® alpha tests, pH indicator papers, pH fix test strips, qualitative and semi-qualitative test papers and test strips

Maximum flexibility - Compact photometer PF-12

Adapted to our customers' requirements the PF-12 impresses with modern design and precise analytics. More than 100 preprogrammed methods, automatic wavelength adjustment and the intuitive user guidance allow fast and easy operation.

Experience flexibility

- More than 100 preprogrammed *VISOCOLOR® ECO* and *NANOCOLOR®* tube tests
- Programmable for 20 user-defined methods
- Photometric basic functions: absorbance, transmission, factor and standard

Save time

- Operation without complex and time-consuming training
- Backlit graphic display with self-explanatory user guidance
- Progressively designed optics is insensitive to external light and makes measuring straightforward

Assure results

- GLP-conform storage of results
- Fast and easy access to stored results and data sets
- Comfortable data export with included *NANOCOLOR®* software DVD



Photometer PF-12

Incl. Software, manual, batteries, empty test tubes, funnel, beaker, syringe, USB cable, calibration cuvette and certificate in rugged case

REF 919 200

Small, strong, smart – Compact photometer PF-3

The smallest and youngest member of the MACHEREY-NAGEL photometer family, the new compact photometer PF-3, is ideally suited for mobile use directly at the point of interest. As the PF-3 is equipped with 3 different wavelengths, it will be available in multiple versions for different applications. Also for the PF-3 MACHEREY-NAGEL offers numerous reagent cases.

Small and though

- Especially handy and light by compact dimensions
- Water proof according to IP 68
- Shock-resistant optics

Easy and convenient

- Fully developed menu structure using just 4 buttons
- Test selection within seconds
- Optional storage for just one 0-measurement

Smart and clever Add new tests and parameters anytime

- Power supply and data transfer via USB port
- Storage of 50 measurements



Compact photometer PF-3 (Version A) (Cl₂, pH, Cya, TA, ClO₂, F⁻, Fe)

Incl. manual, batteries, certificate and accessories in rugged case

REF 934 102

Compact photometer PF-3 (Version E) (NH₄-N, K⁺, NO₃-N, PO₄-P)

Incl. manual, batteries, certificate and accessories rugged case

REF 934 202

More information and a complete list of all versions are available on www.mn-net.com/PF-3 or on request from MACHEREY-NAGEL.

Ordering information

Test	Range (visual)	Type	No. of tests	REF	
				Test kit	Refill pack
Acidity AC 7* (base capacity)	0.2–7.2 mmol/L H ⁺ ¹⁾	HE	200	915 006	915 206
Alkalinity AL 7* (total)	0.2–7.2 mmol/L OH ⁻ ¹⁾	HE	200	915 007	915 207
Alkalinity TA ³⁾	NEW! 0.10–5.00 mmol/L H ⁺	ECO	100	–	931 204
Alkalinity (p/m-value)	see Carbonate hardness C 20				
Aluminum	0.10–0.50 mg/L Al ³⁺	ECO	50	931 006	931 206
Ammonium 15*	0.5–15 mg/L NH ₄ ⁺	ECO	50	931 010	931 210
Ammonium*	0.2–3 mg/L NH ₄ ⁺	alpha	50	935 012	–
Ammonium 3*	0.2–3 mg/L NH ₄ ⁺	ECO	50	931 008	931 208
Ammonium*	0.02–0.50 mg/L NH ₄ ⁺	HE	110	920 006	920 106
Bromine ^{2) 3)}	NEW! 0.10–13.00 mg/L Br ₂	ECO	200	–	931 211
Calcium CA 20*	0.6–25.0 °e / 0.1–3.6 mmol/L Ca ²⁺ ¹⁾	HE	200	915 010	915 210
Calcium*	1 drop \triangleq 5 mg/L Ca ²⁺	ECO	100	931 012	–
Carbonate hardness*	1 drop \triangleq 1.25 °e \triangleq 17.8 mg/L CaCO ₃	alpha	100	935 016	–
Carbonate hardness*	1 drop \triangleq 1.25 °e \triangleq 17.8 mg/L CaCO ₃	ECO	100	931 014	–
Carbonate hardness C 20* (p/m-value)	0.6–25.0 °e / 0.2–7.2 mmol/L H ⁺ ¹⁾	HE	200	915 003	915 203
Chloride*	1–60 mg/L Cl ⁻	ECO	90	931 018	931 218
Chloride CL 500*	5–500 mg/L Cl ⁻ ¹⁾	HE	300	915 004	915 204
Chlorine, free	0.25–2.0 mg/L Cl ₂	alpha	150	935 019	–
Chlorine 2*, free + total	0.1–2.0 mg/L Cl ₂	ECO	150	931 015	931 215
free Chlorine 2*	0.1–2.0 mg/L Cl ₂	ECO	150	931 016	931 216
Chlorine 6, free + total ^{2) 3)}	0.05–6.00 mg/L Cl ₂	ECO	200	–	931 217
free Chlorine 6 ^{2) 3)}	0.05–6.00 mg/L Cl ₂	ECO	400	–	931 219
Chlorine*	0.02–0.60 mg/L Cl ₂	HE	160	920 015	920 115
Chlorine + pH	see Swimming pool				
Chlorine dioxide*	0.2–3.8 mg/L ClO ₂	ECO	150	931 021	931 221
Chromium(VI)*	0.02–0.50 mg/L Cr(VI)	ECO	140	931 020	931 220
Copper	0.1–1.5 mg/L Cu ²⁺	ECO	100	931 037	931 237
Copper	0.04–0.50 mg/L Cu ²⁺	HE	150	920 050	920 150
Cyanide*	0.01–0.20 mg/L CN ⁻	ECO	100	931 022	931 222
Cyanide*	0.002–0.04 mg/L CN ⁻	HE	50	920 028	920 128
Cyanuric acid	10–100 mg/L Cya	ECO	100	931 023	931 223
DEHA* (diethylhydroxylamine)	0.01–0.30 mg/L DEHA	ECO	125	931 024	931 224
Fluoride ^{2) 3)}	0.1–2.0 mg/L F ⁻	ECO	150	–	931 227
total Hardness*	1 drop \triangleq 1.25 °e \triangleq 17.8 mg/L CaCO ₃	alpha	100	935 042	–
total Hardness*	1 drop \triangleq 1.25 °e \triangleq 17.8 mg/L CaCO ₃	ECO	110	931 029	–
total Hardness H 20 F*	0.6–25.0 °e / 0.1–3.6 mmol/L Ca ²⁺ ¹⁾	HE	200	915 005	915 205
total Hardness H 2*	0.06–2.50 °e / 0.01–0.36 mmol/L Ca ²⁺ ¹⁾	HE	200	915 002	915 202
residual Hardness *	0.05–0.37 °e	alpha	200	935 080	–
Hydrazine*	0.05–0.40 mg/L N ₂ H ₄	ECO	130	931 030	931 230
Iron 1*	0.04–1.0 mg/L Fe	ECO	200	931 025	931 225
Iron 2	0.04–1.0 mg/L Fe	ECO	100	931 026	931 226
Iron	0.01–0.20 mg/L Fe	HE	300	920 040	920 140

The measurement range of photometric determination with photometer PF-3 and PF-12 can be different.

¹⁾ For titration test kits the range can be increased using additional titration solution.

²⁾ only for the photometric determination with PF-12

³⁾ only for the photometric determination with PF-3

⁴⁾ based on the chemical procedures of the German Standard Methods (DEV)

* This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see MSDS.

Program VISOCOLOR®

Ordering information

Test	Range (visual)	Type	No. of tests	REF	
				Test kit	Refill pack
Manganese*	0.1–1.5 mg/L Mn	ECO	70	931 038	931 238
Manganese*	0.03–0.50 mg/L Mn	HE	100	920 055	920 155
Nickel*	0.1–1.5 mg/L Ni ²⁺	ECO	150	931 040	931 240
Nitrate*	2–50 mg/L NO ₃ ⁻	alpha	100	935 065	–
Nitrate*	1–120 mg/L NO ₃ ⁻	ECO	110	931 041	931 241
Nitrite*	0.05–1.0 mg/L NO ₂ ⁻	alpha	200	935 066	–
Nitrite*	0.02–0.5 mg/L NO ₂ ⁻	ECO	120	931 044	931 244
Nitrite*	0.005–0.10 mg/L NO ₂ ⁻	HE	150	920 063	920 163
pH 5–9*	pH 5.0–9.0	alpha	200	935 075	–
pH 4.0–9.0*	pH 4.0–9.0	ECO	400	931 066	931 266
pH 4.0–10.0*	pH 4.0–10.0	HE	500	920 074	920 174
pH 6.0–8.2 ^{2) 3)}	pH 6.0–8.2	ECO	150	–	931 270
Phosphate*	2–20 mg/L PO ₄ ³⁻	alpha	70	935 079	–
Phosphate*	0.2–5 mg/L PO ₄ -P	ECO	80	931 084	931 284
Phosphate*	0.05–1.0 mg/L P	HE	300	920 082	920 182
Phosphate* (DEV) ⁴⁾	0.01–0.25 mg/L P	HE	100	920 080	920 180
Potassium*	2–15 mg/L K ⁺	ECO	60	931 032	931 232
Residual hardness	see Hardness (residual)				
Oxygen*	1–10 mg/L O ₂	ECO	50	931 088	931 288
Oxygen SA 10*	0.2–10 mg/L O ₂ ¹⁾	HE	100	915 009	915 209
Silica* / silicon	0.2–3.0 mg/L SiO ₂	ECO	80	931 033	931 233
Silica* / silicon	0.01–0.30 mg/L Si	HE	120	920 087	920 187
Sulfate*	25–200 mg/L SO ₄ ²⁻	ECO	100	931 092	931 292
Sulfide*	0.1–0.8 mg/L S ²⁻	ECO	90	931 094	931 294
Sulfite*	1 drop \triangleq 1 mg/L SO ₃ ²⁻	ECO	60	931 095	–
Sulfite SU 100*	2–100 mg/L SO ₃ ²⁻ ¹⁾	HE	100	915 008	915 208
Swimming pool* (Chlorine + pH)	0.1–2.0 mg/L Cl ₂ pH 6.9–8.2	ECO	150 150	931 090	931 290
Zinc*	0.5–3 mg/L Zn ²⁺	ECO	120	931 098	931 298

The measurement range of photometric determination with photometer PF-3 and PF-12 can be different.

¹⁾ For titration test kits the range can be increased using additional titration solution.

²⁾ only for the photometric determination with PF-12

³⁾ only for the photometric determination with PF-3

⁴⁾ based on the chemical procedures of the German Standard Methods (DEV)

* This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see MSDS.



Applications

Universally applicable



Soil analysis



Aquaculture



Breweries



Chemical industry



Electroplating industry



Food & beverage industries



Leather industry



Metal processing industry



Milk industry



Pool & spa care



Textile industry



Cement & concrete production

Customized case solutions

Catering to our individual customer needs is one of the great importance to MACHEREY-NAGEL. Even though our case solutions provide a high level of flexibility, we recognize that some customers may have specific requirements outside our existing case solutions. Therefore, we offer entirely individual solutions with a foam inlay designed exactly to your specifications and testing needs. Starting with a minimum of 50 cases, we can provide you with a case that perfectly fits your personal requirements. We also offer readily packed cases starting at a minimum quantity of 50 cases as well. Thus, within our highly flexible case range, we can provide virtually any customer with the perfect testing and transportation solution.

Contact



Technical support and customer service
for Filtration, Rapid Tests, Water Analysis:

+49 24 21 / 969 161
+49 24 21 / 969 138
+49 24 21 / 969 190
+49 24 21 / 969 174
+49 24 21 / 969 340
+49 24 21 / 969 187
csc@mn-net.com

Your local distributor:

www.mn-net.com

MACHEREY-NAGEL



MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6-8 · 52355 Düren · Germany

Germany

and international:

Tel.: +49 24 21 969-0

Fax: +49 24 21 969-199

E-mail: info@mn-net.com

Switzerland:

MACHEREY-NAGEL AG

Tel.: +41 62 388 55 00

Fax: +41 62 388 55 05

E-mail: sales-ch@mn-net.com

France:

MACHEREY-NAGEL EURL

Tel.: +33 388 68 22 68

Fax: +33 388 51 76 88

E-mail: sales-fr@mn-net.com

USA:

MACHEREY-NAGEL Inc.

Tel.: +1 484 821 0984

Fax: +1 484 821 1272

E-mail: sales-us@mn-net.com



Since 1911