

# Visual test kits

## VISOCOLOR®

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# VISOCOLOR® alpha

## Colorimetric and titrimetric test kits

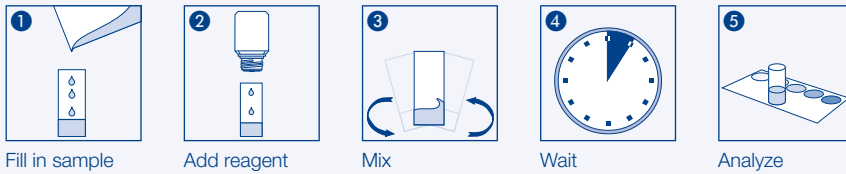
VISOCOLOR® alpha is the most simple version of colorimetric and titrimetric test kits. These tests are suitable for visual evaluation only and are very convenient in performance, because of the used multicomponent reagents. Therefore, the test kits are limited in precision and accuracy but represent an inexpensive method for screening tests of non-turbid and uncolored water samples. The reagent bottles are packed in practical blister packs. The color comparison chart for colorimetric evaluations, as well as the test instructions, are provided on the cardboard back, which is also used for opening and closing of the package.



### How it's done



#### Colorimetric



#### Titrimetric



Visual test kits

## Ordering information

Test	REF	Measuring range	Number of tests	Shelf life	Method
■ Ammonium	935012	0 · 0.2 · 0.5 · 1 · 2 · 3 mg/L NH <sub>4</sub> <sup>+</sup>	50	1.5 years	Indophenol
■ Carbonate hardness	935016	1 drop equals 1.25 °e	100	1.5 years	Mixed indicator
■ Chlorine, free	935019	0.25 · 0.5 · 1.0 · 1.5 · 2.0 mg/L Cl <sub>2</sub>	150	1.5 years	DPD
■ Nitrate	935065	2 · 8 · 15 · 30 · 50 mg/L NO <sub>3</sub> <sup>-</sup>	100	1.5 years	Azo dye
■ Nitrite	935066	0.05 · 0.10 · 0.25 · 0.5 · 1.0 mg/L NO <sub>2</sub> <sup>-</sup>	200	1.5 years	Sulfanilic acid / 1-naphthylamine
■ pH 5–9	935075	pH 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	200	3 years	Mixed indicator
■ Phosphate	935079	2 · 5 · 10 · 15 · 20 mg/L PO <sub>4</sub> <sup>3-</sup>	70	2 years	Phosphomolybdenum blue
■ Residual hardness	935080	0.00 · 0.05 · 0.10 · 0.19 · 0.38 °e	200	1 year	Mixed indicator
■ Total hardness	935042	1 drop equals 1.25 °e	100	1.5 years	Complexometric titration

<sup>1)</sup> Please see the instruction leaflet.

GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.



	Colorimetric	Titrimetric	Sea water <sup>1)</sup>	GHS	Test
	■		■	■	Ammonium
		■	■		Carbonate hardness
	■		■	■	Chlorine, free
	■		■	■	Nitrate
	■		■	■	Nitrite
	■		■	■	pH 5-9
	■		■	■	Phosphate
	■			■	Residual hardness
		■	■	■	Total hardness

## Colorimetric and titrimetric test kits

VISOCOLOR® ECO presents a product group of colorimetric and titrimetric test kits, which allow even the determination of low limiting values with sufficient accuracy. The high sensitivity and accuracy is accomplished by single reagents which can be dosed precisely and by the possibility to compensate turbidity and color of water samples.

The results are evaluated visually with high-quality color comparison cards, which are adjusted to the original colors of standard solutions. In addition, there is the possibility to evaluate most VISOCOLOR® ECO tests also photometrically with the compact photometers PF-3 (see page 134) and PF-12<sup>Plus</sup> (see page 132) and spectrophotometer NANOCOLOR® Advance (see page 128). This enables a quantitative evaluation of the test kit.

Budget-priced refill packs are available for photometric evaluation as well as for replacement of consumed chemicals.

All VISOCOLOR® ECO test kits are delivered in a practical cardboard box with plastic inlay and easy to understand instruction manual. In addition, pictogram instructions are available for every test kit on the MACHEREY-NAGEL website.

### Good to know

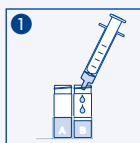
The easiest way to check your photometric chlorine measurement: VISOCOLOR® Color standards Chlorine (REF 914820)



### How it's done



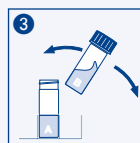
#### Colorimetric



Fill in sample



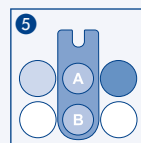
Add reagent



Mix

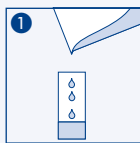


Wait

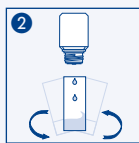


Analyze

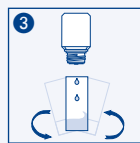
#### Titrimetric



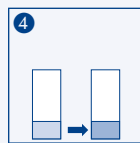
Fill in sample



Add indicator



Add titration solution and mix



Color change

## Ordering information

Test	REF	REF refill	Measuring range (visual)	Measuring range (photometric) <sup>4)</sup>	Number of tests
■ Alkalinity TA	–	931204	–	0.4–17.5 °e/5–250 mg/L CaCO <sub>3</sub>	100
■ Aluminum	931006	931206	0·0.10·0.15·0.20·0.25·0.30·0.40·0.50 mg/L Al <sup>3+</sup>	–	50
■ Ammonium 3	931008	931208	0·0.2·0.3·0.5·0.7·1·2·3 mg/L NH <sub>4</sub> <sup>+</sup>	0.1–2.5 mg/L NH <sub>4</sub> <sup>+</sup>	50
■ Ammonium 15	931010	931210	0·0.5·1·2·3·5·7·10·15 mg/L NH <sub>4</sub> <sup>+</sup>	0.5–8.0 mg/L NH <sub>4</sub> <sup>+</sup>	50
■ Bromine	–	931211	–	0.10–13.00 mg/L Br <sub>2</sub>	200
■ Calcium	931012	–	1 drop equals 5 mg/L Ca <sup>2+</sup>	–	100
■ Carbonate hardness	931014	–	1 drop equals 1.25 °e	–	100
■ Chloride	931018	931218	1·2·4·7·12·20·40·60 mg/L Cl <sup>-</sup>	1–50 mg/L Cl <sup>-</sup>	90
■ Chlorine + pH see Swimming pool					

<sup>1)</sup> Please see the instruction leaflet.

<sup>2)</sup> For evaluation with the PF-12/PF-12<sup>Plus</sup>, a special filter (450 nm) is required.

<sup>3)</sup> Additionally required with first order: Oxygen sample bottle, REF 915498.

<sup>4)</sup> Measuring range for photometric evaluation with the PF-12<sup>Plus</sup>. Range on other photometers can be different.

GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.  
refill: Refill pack, sufficient for photometric determination.

## Easy

- Chemical analysis without further accessories
- No extensive training necessary
- Color-coded reagents with clear dosing instructions

## Safe

- Pictogram test instructions
- Reaction basis according to international standards
- Compensation of turbidity and color

## Unique

- High quality test kits
- Business-prized refill packs
- Ecologically friendly disposal of used reagents



Shelf life	Method											
		Advance	PF-12 <sup>plus</sup>	PF-3 Drinking Water	PF-3 Fish	PF-3 Pool	PF-3 Soil	Colorimetric	Titrimetric	Sea water <sup>1)</sup>	GH/S	Test
1 year	Bromophenol blue	■	■	■		■		■		■		Alkalinity TA
2 years	Chromazurol S							■		■		Aluminum
1.5 years	Indophenol	■	■		■			■		■	■	Ammonium 3
1.5 years	Indophenol	■	■					■		■	■	Ammonium 15
2 years	DPD	■	■	■		■		■		■		Bromine
1.5 years	Complexometric titration								■	■	■	Calcium
2 years	Mixed indicator								■	■	■	Carbonate hardness
1 year	Mercury(II)-thiocyanate / Iron(III)-nitrate	■	■					■			■	Chloride
												Chlorine + pH see Swimming pool

Test	REF	REF refill	Measuring range (visual)	Measuring range (photometric) <sup>4)</sup>	Number of tests
■ Chlorine 1, free + total	931035	931235	< 0.1 · 0.1 · 0.2 · 0.3 · 0.4 · 0.6 · 0.9 · 1.2 · 2.0 mg/L Cl <sub>2</sub>	0.05–2.00 mg/L Cl <sub>2</sub>	150
■ free Chlorine 2	931016	931216	< 0.1 · 0.1 · 0.2 · 0.3 · 0.4 · 0.6 · 0.9 · 1.2 · 2.0 mg/L Cl <sub>2</sub>	0.05–2.00 mg/L Cl <sub>2</sub>	150
■ Chlorine 2, free + total	931015	931215	< 0.1 · 0.1 · 0.2 · 0.3 · 0.4 · 0.6 · 0.9 · 1.2 · 2.0 mg/L Cl <sub>2</sub>	0.05–2.00 mg/L Cl <sub>2</sub>	150
■ free Chlorine 6	–	931219	–	0.05–6.00 mg/L Cl <sub>2</sub>	400
■ Chlorine 6, free + total	–	931217	–	0.05–6.00 mg/L Cl <sub>2</sub>	200
■ Chlorine dioxide	931021	931221	< 0.2 · 0.2 · 0.4 · 0.6 · 0.8 · 1.1 · 1.7 · 2.3 · 3.8 mg/L ClO <sub>2</sub>	0.20–3.80 mg/L ClO <sub>2</sub>	150
■ Chromium(VI)	931020	931220	0.02 · 0.05 · 0.10 · 0.15 · 0.20 · 0.30 · 0.40 · 0.50 mg/L Cr(VI)	0.02–0.50 mg/L Cr(VI)	140
■ Copper	931037	931237	0 · 0.1 · 0.2 · 0.3 · 0.5 · 0.7 · 1.0 · 1.5 mg/L Cu <sup>2+</sup>	0.1–5.0 mg/L Cu <sup>2+</sup>	100
■ Cyanide	931022	931222	0 · 0.01 · 0.02 · 0.03 · 0.05 · 0.07 · 0.10 · 0.15 · 0.20 mg/L CN <sup>-</sup>	0.01–0.20 mg/L CN <sup>-</sup>	100
■ Cyanuric acid	931023	931223	10 · 15 · 20 · 30 · 40 · 60 · 80 · 100 mg/L Cya	10–100 mg/L Cya	100
■ DEHA	931024	931224	0 · 0.01 · 0.03 · 0.05 · 0.10 · 0.15 · 0.20 · 0.25 · 0.30 mg/L DEHA	–	125
■ Detergents, anionic	931050	931250	0.1 · 0.25 · 0.5 · 1.0 · 2.0 · 5.0 mg/L MBAS	–	50
■ Detergents, cationic	931051	931251	0 · 1 · 3 · 5 · 10 · 15 · 20 mg/L CTAB	–	50
■ Fluoride	–	931227	–	0.1–2.0 mg/L F <sup>-</sup>	150
■ Hydrazine	931030	931230	0 · 0.05 · 0.10 · 0.15 · 0.20 · 0.25 · 0.30 · 0.40 mg/L N <sub>2</sub> H <sub>4</sub>	0.05–0.40 mg/L N <sub>2</sub> H <sub>4</sub>	130
■ Iron 1	931025	931225	0 · 0.04 · 0.07 · 0.10 · 0.15 · 0.20 · 0.30 · 0.50 · 1.0 mg/L Fe	0.04–2.00 mg/L Fe	200
■ Iron 2	931026	931226	0 · 0.04 · 0.07 · 0.10 · 0.15 · 0.20 · 0.30 · 0.50 · 1.0 mg/L Fe	0.04–2.00 mg/L Fe	100
■ Manganese	931038	931238	0 · 0.1 · 0.2 · 0.3 · 0.5 · 0.7 · 0.9 · 1.2 · 1.5 mg/L Mn	0.1–5.0 mg/L Mn	70
■ Nickel	931040	931240	0 · 0.1 · 0.2 · 0.3 · 0.5 · 0.7 · 0.9 · 1.2 · 1.5 mg/L Ni <sup>2+</sup>	0.04–5.00 mg/L Ni <sup>2+</sup>	150
■ Nitrate	931041	931241	0 · 1 · 3 · 5 · 10 · 20 · 30 · 50 · 70 · 90 · 120 mg/L NO <sub>3</sub> <sup>-</sup>	4–60 mg/L NO <sub>3</sub> <sup>-</sup>	110
■ Nitrite	931044	931244	0 · 0.02 · 0.03 · 0.05 · 0.07 · 0.1 · 0.2 · 0.3 · 0.5 · mg/L NO <sub>2</sub> <sup>-</sup>	0.02–0.50 mg/L NO <sub>2</sub> <sup>-</sup>	120
■ Oxygen <sup>3)</sup>	931088	931288	0 · 1 · 2 · 3 · 4 · 6 · 8 · 10 mg/L O <sub>2</sub>	1–8 mg/L O <sub>2</sub>	50
■ pH 4.0–9.0	931066	931266	pH: 4.0 · 5.0 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	–	450
■ pH 6.0–8.2	–	931270	–	pH 6.1–8.4	150
■ Phosphate	931084	931284	0 · 0.2 · 0.3 · 0.5 · 0.7 · 1 · 2 · 3 · 5 mg/L PO <sub>4</sub> -P	0.2–5.0 mg/L PO <sub>4</sub> -P	80
■ Potassium	931032	931232	2 · 3 · 4 · 6 · 8 · 10 · 15 mg/L K <sup>+</sup>	2–25 mg/L K <sup>+</sup>	60
■ Silica	931033	931233	0 · 0.2 · 0.4 · 0.6 · 1.0 · 1.5 · 2.0 · 2.5 · 3.0 mg/L SiO <sub>2</sub>	0.2–3.0 mg/L SiO <sub>2</sub>	80
■ Silica HR 200	–	931234	–	10–200 mg/L SiO <sub>2</sub> <sup>2)</sup>	100
■ Sulfate	931092	931292	25 · 30 · 35 · 40 · 50 · 60 · 70 · 80 · 100 · 120 · 150 · 200 mg/L SO <sub>4</sub> <sup>2-</sup>	20–200 mg/L SO <sub>4</sub> <sup>2-</sup>	100
■ Sulfide	931094	931294	0.1 · 0.2 · 0.3 · 0.4 · 0.5 · 0.6 · 0.7 · 0.8 mg/L S <sup>2-</sup>	0.05–0.80 mg/L S <sup>2-</sup>	90
■ Sulfite	931095	–	1 drop equals 1 mg/L SO <sub>3</sub> <sup>2-</sup>	–	60
■ Swimming pool	931090	931290	Chlorine: < 0.1 · 0.1 · 0.2 · 0.3 · 0.4 · 0.6 · 0.9 · 1.2 · 2.0 mg/L Cl <sub>2</sub> pH: 6.9 · 7.2 · 7.4 · 7.6 · 7.8 · 8.2	–	150
■ Total hardness	931029	–	1 drop equals 1.25 °e	–	110
■ Zinc	931098	931298	0 · 0.5 · 1 · 2 · 3 mg/L Zn <sup>2+</sup>	0.1–3.0 mg/L Zn <sup>2+</sup>	120

<sup>1)</sup> Please see the instruction leaflet.

<sup>2)</sup> For evaluation with the PF-12/PF-12<sup>Plus</sup>, a special filter (450 nm) is required.

<sup>3)</sup> Additionally required with first order: Oxygen sample bottle, REF 915498.

<sup>4)</sup> Measuring range for photometric evaluation with the PF-12<sup>Plus</sup>. Range on other photometers can be different.

GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.  
refill: Refill pack, sufficient for photometric determination.

Shelf life	Method	Advance	PF-12 <sup>plus</sup>	PF-3 Drinking Water	PF-3 Fish	PF-3 Pool	PF-3 Soil	Colorimetric	Titrimetric	Sea water <sup>1)</sup>	GHS	Test
2 years	DPD	■	■	■		■		■		■		Chlorine 1, free + total
1.5 years	DPD	■	■	■		■		■			■	free Chlorine 2
1.5 years	DPD	■	■	■		■		■			■	Chlorine 2, free + total
2 years	DPD	■	■	■		■		■		■		free Chlorine 6
2 years	DPD	■	■	■	■	■		■		■		Chlorine 6, free + total
1.5 years	DPD	■	■	■		■		■			■	Chlorine dioxide
1.5 years	Carbazide	■	■		■			■		■	■	Chromium(VI)
2 years	Cuprizone	■	■		■			■		■		Copper
1 year	Barbituric acid / pyridine	■	■		■			■		■	■	Cyanide
1.5 years	Triazine (turbidity)	■	■	■		■		■		■		Cyanuric acid
1 year	Redox reaction	■	■					■		■		DEHA
2 years	Methylene blue							■		■	■	Detergents, anionic
2 years	Bromphenol blue							■		■	■	Detergents, cationic
1.5 years	SPADNS	■	■	■		■		■		■	■	Fluoride
1 year	4-Dimethylaminobenzaldehyde	■	■					■		■	■	Hydrazine
2 years	Triazine	■	■	■	■	■		■		■	■	Iron 1
2 years	Triazine	■	■	■		■	■	■		■		Iron 2
1.5 years	Formaloxime	■	■		■			■		■	■	Manganese
1.5 years	Dimethylglyoxime	■	■					■		■	■	Nickel
1.5 years	Azo dye	■	■		■		■	■		■		Nitrate
1.5 years	Sulfanilic acid / 1-naphthylamine	■	■		■			■		■		Nitrite
1 year	Winkler	■	■		■			■		■	■	Oxygen <sup>3)</sup>
3 years	Mixed indicator							■		■	■	pH 4.0–9.0
1.5 years	Mixed indicator	■	■	■	■	■		■		■		pH 6.0–8.2
3 years	Phosphormolybdenum blue	■	■		■		■	■		■	■	Phosphate
3 years	Potassium tetraphenyl borate (turbidity)	■	■		■		■	■		■	■	Potassium
3 years	Silicomolybdenum blue	■	■		■			■		■	■	Silica
3 years	Silicomolybdenum blue	■	■	■		■		■		■	■	Silica HR 200
3 years	Barium sulfate (turbidity)	■	■					■		■	■	Sulfate
3 years	DPD	■	■					■		■	■	Sulfide
1 year	Iodometric titration								■	■	■	Sulfite
1.5 years	DPD Mixed indicator							■		■	■	Swimming pool
1.5 years	Complexometric titration							■	■	■	■	Total hardness
1 year	Zincon	■	■					■		■	■	Zinc

## Colorimetric and titrimetric test kits

VISOCOLOR® HE test kits are highly sensitive colorimetric and titrimetric tests to determine even the lowest limiting values.

The exact dosing of the single reagents as well as the compensation of turbidity and color are the basis for a highly precise analysis. Maximum sensitivity and accuracy are achieved by the use of longer measuring tubes and larger sample volumes. The sensitivity of VISOCOLOR® HE is 10 to 100 times higher compared to other VISOCOLOR® tests.

The visual evaluation of the colorimetric test kits is done with high-quality color comparison disks, which are adjusted to the original color of standard solutions.

Refill packs are available as replacement for consumed reagents. Every VISOCOLOR® HE test kit is delivered in a robust box with plastic inlay and an easy to understand instruction leaflet.

### Good to know

VISOCOLOR® HE test kits reach the highest sensitivity and accuracy in visual analytics.



## Ordering information

Test	REF	REF refill	Measuring range	Number of tests	Shelf life
■ Acidity AC 7 (base capacity)	915006	915206	0.2–7.2 mmol/L H <sup>+</sup> (1 syringe filling)	200	2 years
■ Alkalinity AL 7 (acid capacity)	915007	915207	0.2–7.2 mmol/L OH <sup>-</sup> (1 syringe filling)	200	2 years
■ Ammonium	920006	920106	0.0 · 0.02 · 0.04 · 0.07 · 0.10 · 0.15 · 0.20 · 0.30 · 0.40 · 0.50 mg/L NH <sub>4</sub> <sup>+</sup>	110	1 year
■ Calcium CA 20	915010	915210	0.6–25.0 °e / 0.1–3.6 mmol/L Ca <sup>2+</sup> (1 syringe filling)	200	2 years
■ Carbonate hardness C 20	915003	915203	0.6–25.0 °e / 0.2–7.2 mmol/L H <sup>+</sup> (1 syringe filling)	200	2 years
■ Chloride CL 500	915004	915204	5–500 mg/L Cl <sup>-</sup> (1 syringe filling)	300	2 years
■ Chlorine, free + total	920015	920115	0.0 · 0.02 · 0.04 · 0.06 · 0.10 · 0.15 · 0.20 · 0.30 · 0.40 · 0.60 mg/L Cl <sub>2</sub>	160	2 years
■ Copper	920050	920150	0.0 · 0.04 · 0.07 · 0.10 · 0.15 · 0.20 · 0.25 · 0.30 · 0.40 · 0.50 mg/L Cu <sup>2+</sup>	150	2 years
■ Cyanide	920028	920128	0.0 · 0.002 · 0.004 · 0.007 · 0.010 · 0.015 · 0.020 · 0.025 · 0.030 · 0.040 mg/L CN <sup>-</sup>	50	1 year
■ Iron	920040	920140	0.0 · 0.01 · 0.02 · 0.03 · 0.04 · 0.05 · 0.07 · 0.10 · 0.15 · 0.20 mg/L Fe	300	2 years
■ Manganese	920055	920155	0.0 · 0.03 · 0.06 · 0.10 · 0.15 · 0.20 · 0.25 · 0.30 · 0.40 · 0.50 mg/L Mn	100	1.5 years
■ Nitrite	920063	920163	0.0 · 0.005 · 0.010 · 0.015 · 0.02 · 0.03 · 0.04 · 0.06 · 0.08 · 0.10 mg/L NO <sub>2</sub> <sup>-</sup>	150	2 years
■ Oxygen SA 10	915009	915209	0.2–10.0 mg/L O <sub>2</sub> (1 syringe filling)	100	1.5 years
■ pH 4.0–10.0	920074	920174	pH 4.0 · 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0 · 10.0	500	2 years
■ Phosphate	920082	920182	0.0 · 0.05 · 0.10 · 0.15 · 0.20 · 0.3 · 0.4 · 0.6 · 0.8 · 1.0 mg/L PO <sub>4</sub> -P	300	2 years
■ Phosphate (DEV)	920080	920180	0.0 · 0.01 · 0.02 · 0.03 · 0.05 · 0.07 · 0.10 · 0.15 · 0.20 · 0.25 mg/L PO <sub>4</sub> -P	100	2 years
■ Silica	920087	920187	0.0 · 0.01 · 0.02 · 0.03 · 0.05 · 0.07 · 0.10 · 0.15 · 0.20 · 0.30 mg/L Si	120	2 years
■ Sulfite SU 100	915008	915208	2–100 mg/L SO <sub>3</sub> <sup>2-</sup> (1 syringe filling)	100	3 years
■ Total hardness H 2	915002	915202	0.06–2.50 °e / 0.01–0.36 mmol/L Ca <sup>2+</sup> (1 syringe filling)	200	1.5 years
■ Total hardness H 20 F	915005	915205	0.6–25.0 °e / 0.1–3.6 mmol/L Ca <sup>2+</sup> (1 syringe filling)	200	1.5 years

<sup>1)</sup> Please see the instruction leaflet.

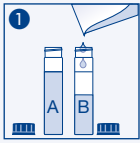
GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.  
refill.: Refill pack



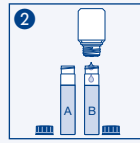
How it's done



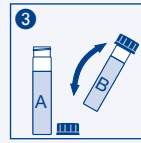
Colorimetric



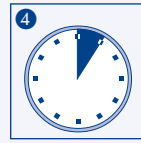
Fill in sample



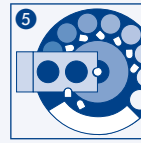
Add reagent



Mix

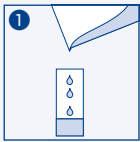


Wait

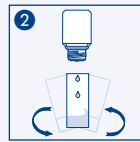


Analyze

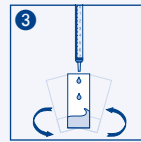
Titrimetric



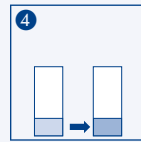
Fill in sample



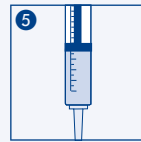
Add indicator and mix



Add titration solution and mix



Color change



Analyze

Method

Colorimetric  
Titrimetric  
Sea water (1)  
GHS  
Test

Phenolphthalein		■	■	■	Acidity AC 7 (base capacity)
Methyl red		■	■	■	Alkalinity AL 7 (acid capacity)
Indophenol	■			■	Ammonium
Complexometric titration		■	■	■	Calcium CA 20
Mixed indicator		■	■	■	Carbonate hardness C 20
Mercurimetric titration		■	■	■	Chloride CL 500
DPD	■		■		Chlorine, free + total
Cuprizon	■		■		Copper
Barbituric acid / pyridine	■		■	■	Cyanide
Triazine	■				Iron
Formaloxime	■			■	Manganese
Sulfanilic acid / 1-naphthylamine	■		■		Nitrite
Winkler		■	■	■	Oxygen SA 10
Mixed indicator	■		■	■	pH 4.0-10.0
Phosphorous molybdenum blue	■		■	■	Phosphate
Phosphorous molybdenum blue	■		■	■	Phosphate (DEV)
Silicomolybdenum blue	■		■	■	Silica
Iodometric titration		■	■	■	Sulfite SU 100
Complexometric titration		■		■	Total hardness H 2
Complexometric titration		■	■	■	Total hardness H 20 F



# VISOCOLOR® Powder Pillows

## Photometric reagent Powder Pillows

VISOCOLOR® Powder Pillows are photometric tests that combine easiest dosing of reagents with photometric precision. Each VISOCOLOR® powder pillow contains the exact amount of reagents needed for a determination. The individually packaged portions not only stand out due to their very long shelf life, but also avoid the use of hazardous substances wherever possible. Easy to understand test instructions with pictograms in 6 languages are available on MACHEREY-NAGEL homepage. VISOCOLOR® Powder Pillows can be evaluated on compact photometers PF-12<sup>Plus</sup> (see page 132), PF-3 (see page 134) and spectrophotometers NANOCOLOR® Advance (see page 128) NANOCOLOR® VIS II and NANOCOLOR® UV/VIS II (see page 124).

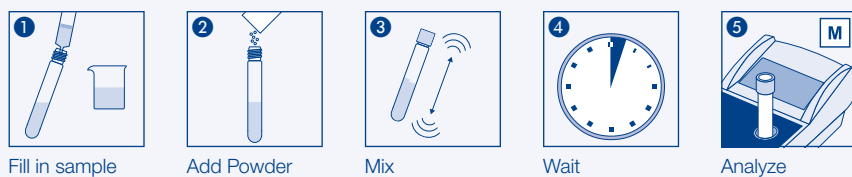
### Good to know

Most VISOCOLOR® Powder Pillows for chlorine and silica can be directly used in competitor's photometers. They are ready to use with pre-programmed methods and equipment, no further calibration is needed.



### How it's done

#### Application VISOCOLOR® Powder Pillows



Visual test kits

## Ordering information

Test	REF	Number of tests	Measuring range	Shelf life	Method
■ Ammonium	936229	100	0.02-0.80 mg/L NH <sub>4</sub> -N	3 years	Bethelot reaction
■ free Chlorine	936220 936220.1	100 1000	0.03-6.00 mg/L Cl <sub>2</sub>	5 years	DPD
■ total Chlorine, Ozone	936221 936221.1	100 1000	0.03-6.00 mg/L Cl <sub>2</sub> / 0.03-4.00 mg/L O <sub>3</sub>	5 years	DPD
■ Iron	936227	100	0.03 – 3.00 mg/L Fe	3 years	1,10-Phenanthroline
■ Nitrate	936226	100	1.0-50 mg/L NO <sub>3</sub> -N	3 years	Azo dye
■ Nitrite	936230	100	0.01-0.30 mg/L NO <sub>2</sub> -N	3 years	Diazotation
■ pH	936222	100	pH: 6.2-8.2	5 years	Mixed indicator
■ Phosphate	936228	100	0,02-4,50 mg/L PO <sub>4</sub> -	3 years	Phosphormolybdenum blue
■ Silica LR <sup>1)</sup>	936224	100	0.02-2.10 mg/L SiO <sub>2</sub>	3 years	Silicomolybdenum blue
■ Silica HR <sup>2)</sup>	936225	100	2-210 mg/L SiO <sub>2</sub>	3 years	Molybdosilic acid
■ Sulfate	936223	100	15-200 mg/L SO <sub>4</sub> <sup>2-</sup>	5 years	Barium sulfate (turbidity)

<sup>1)</sup> Measuring range for photometric evaluation on NANOCOLOR® VIS II. Range on other photometers can be different.

<sup>2)</sup> For evaluation with the PF-12<sup>Plus</sup>, a special filter (450 nm) is required.

GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.

## Easy

- Dosing without spoon or pipette
- Pictogram instructions for each test
- No zero measurement required

## Safe

- Photometric precision for best results
- Reaction basis according to international standards
- Extremely long shelf life

## Unique

- Optimal price / performance-ratio
- Works on competitor's photometers
- Ecologically friendly disposal of used reagents



	Spectrophotometers	PF-12 <sup>Plus</sup>	PF-3 Drinking Water	PF-3 Fish	PF-3 Pool	PF-3 Soil	Competitor compatible	Sea Water	GH5	Test
■	■		■	■	■		■		■	Ammonium
■	■	■	■	■	■		■	■		free Chlorine
■	■	■	■	■	■		■	■		total Chlorine, Ozone
■	■	■	■	■	■		■	■	■	Iron
■	■	■	■	■	■		■	■	■	Nitrate
■	■	■	■	■	■		■	■	■	Nitrite
■	■	■		■			■	■		pH
■	■		■			■	■	■	■	Phosphate
■	■	■	■	■	■		■	■	■	Silica LR
■	■	■	■	■	■		■	■	■	Silica HR
■	■	■	■	■	■			■	■	Sulfate

# VISOCOLOR® accessories

## The complete analysis from one source

VISOCOLOR® test kits from MACHEREY-NAGEL are ideally suited for the fast and easy water analysis. Besides the test kits, MACHEREY-NAGEL offers a broad range of accessories for VISOCOLOR® tests.

### Good to know

VISOCOLOR® Color standards Chlorine (REF 914820) simulate the reaction color of DPD-based VISOCOLOR® chlorine tests for simple photometer check.



## Ordering information

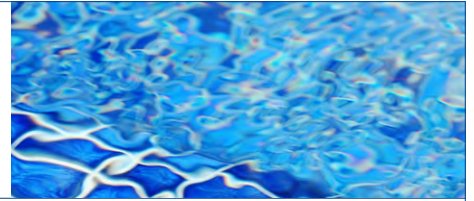
Description	REF	Content	GHS
<b>Inspection solutions</b>			
■ VISOCOLOR® Color standards Chlorine for checking consistent instrument response of NANOCOLOR® UV/VIS II, VIS II, NANOCOLOR® Advance, PF-12 <sup>Plus</sup> and PF-3	914820	4 solutions	
<b>Accessories</b>			
■ Measuring glasses for VISOCOLOR® ECO with screw caps	931151	10 pieces	
■ Slide comparator for VISOCOLOR® ECO	931152	2 pieces	
■ Color comparison chart for VISOCOLOR® ECO (REF end No. see test kit)	931 4..	1 piece	
■ Titration test tube with 5-mL-marking	915499	1 piece	
■ Sample bottle 30 mL for oxygen determination	915498	1 piece	
■ Sample beaker 25 mL	914498	1 piece	
■ Sample tube with 10-/20-mL-marking	914496	1 piece	
■ Measuring tube 25–200 mg/L Sulfate	914495	1 piece	
■ Measuring tube 2–15 mg/L Potassium	914444	1 piece	
■ Test tubes 16 mm OD	91680	20 pieces	
■ Test tubes 24 mm OD	936101	6 pieces	
■ Plastic spoon (measuring spoon) black, 85 mm	914663	10 pieces	
■ Plastic spoon (measuring spoon) orange, 85 mm	914664	10 pieces	
■ Plastic spoon (measuring spoon) black, 70 mm	914492	10 pieces	
■ VISOCOLOR® ECO test instructions for photometer PF-12 <sup>Plus</sup>	931503	1 piece	
■ VISOCOLOR® ECO test instructions for photometer PF-12	931501	1 piece	
■ VISOCOLOR® ECO test instructions for photometer PF-3	934001	1 piece	
■ VISOCOLOR® ECO test instructions for visual determination	931502	1 piece	
■ Additive reagent Z-1 to eliminate copper ions prior determination of total hardness	931929	30 mL	■
■ Measuring tube for VISOCOLOR® HE with screw cap	920401	10 pieces	
■ Comparator block for VISOCOLOR® HE	920402	1 piece	
■ Color comparison disk for VISOCOLOR® HE (REF end No. see test kit)	9203..	1 piece	
■ Spare syringes for VISOCOLOR® HE (REF end No. see test kit)	9154..	2 pieces	
■ Thermometer -10 °C to +60 °C	914497	1 piece	

GHS: Globally harmonized system: This product contains harmful substances which must be specially labeled as hazardous. For detailed information please see the SDS.



# VISOCOLOR®

## Color standards Chlorine



### Simplest photometer control

- For VISOCOLOR® chlorine analysis
- Simulates DPD reaction color
- Three concentrations in a rugged case
- For VISOCOLOR® ECO tests and VISOCOLOR® Powder Pillows

