MACHEREY-NAGEL

"Made in Germany" since 1911

FILTRATION

RAPID TESTS

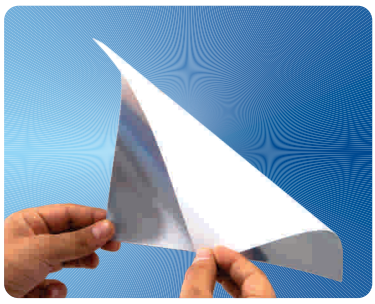
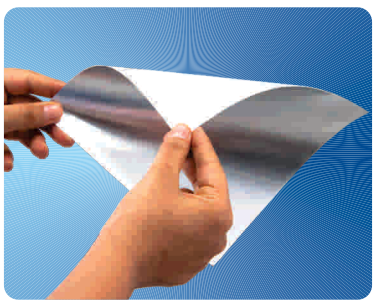
WATER ANALYSIS

CHROMATOGRAPHY

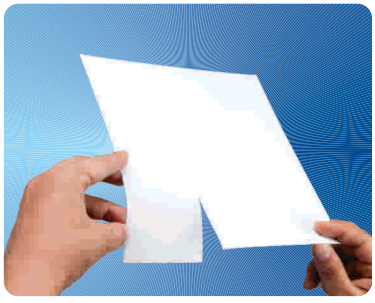
www.mnfilter.com

ALUGRAM® Xtra SIL G

“Unmodified Standard Silica Layers on Aluminium for TLC”


Great flexibility & outstanding wettability for precise colorization results

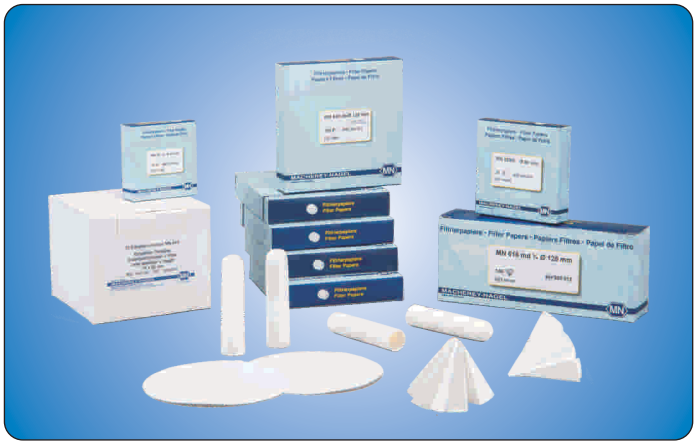




Easy and reliable cutting due to an optimized binder system, no flaking of silica

MACHEREY-NAGEL

Contents :

Section I — Filtration



Section II — Chromatography

Section III — Rapid Tests & Water Analysis

Authorised Distributors for India, Bangladesh, Sri Lanka

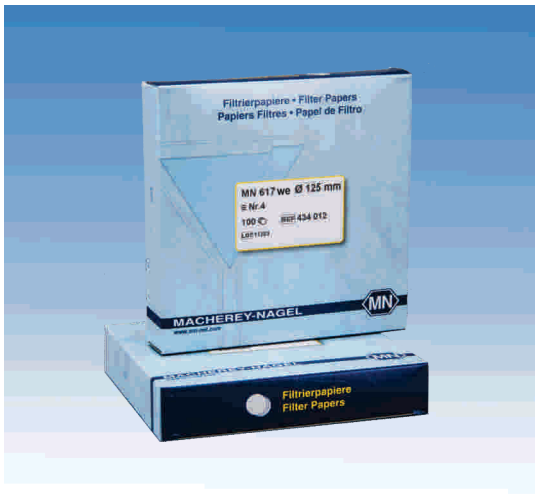
India

Bangladesh

Sri Lanka

CONTACT : LOBA CHEMIE PVT. LTD., 107, Jehangir Villa, Wode House Road, Colaba, Mumbai 400005
Tel.: +91 22 6663 6663, Fax : +91 22 6663 6699, Email : sales-in@mnfilter.com, info@lobachemie.com

Filtration



Section I

- **Raw materials and Manufacture** 3
- **Applications** 4
- **Particle retention of MN filter papers** 5
- **Filter papers for qualitative analysis** 6
  - Standard filter papers 6
  - Qualitative filter papers 7
  - Wet-strengthened filter papers 8
- **Filter papers for quantitative analysis** 9
  - Ashless filter papers 9
  - Hardened filter papers 10
- **Filter Aid** 10
- **Glass Microfibre Filters** 12
  - Glass fibre filters / quartz fibre filters 12
- **Extraction thimbles** 13
  - Extraction thimbles made from cellulose 13
  - Extraction thimbles made from borosilicate glass 13
- **Filter papers for technical applications** 16
  - Smooth and thick filter papers 16
  - Creped filter papers 17
  - Embossed filter papers 17
- **Filter papers for special applications** 18
  - Activated charcoal filter paper 18
- **Specialised Laboratory Products** 19
  - Soil analysis, phosphate-free filters 19
  - Polyester paper 19
  - Filter papers for breweries 20
  - Activated charcoal filter paper 20
  - Kieselguhr paper MN 660 21
  - Black filter paper for the detection of light precipitates 21
  - Weighing aids 22
  - Lens tissue paper (José paper) 22
  - Microscopy 22
  - Antibiotic resistance testing 23
  - Ion exchange papers 23
  - Surface protection paper LAB-TOP 23

Applications

Agriculture
Cellulose Filter Papers
Basic Lab
Cellulose Filter Papers
Syringe Filters
Extraction thimbles
Surface Protection Paper Lab - Top
pH Papers
Chromatography Products
Environmental Monitoring
Cellulose Filter Papers
Glass Microfiber Filters
MN QF 10 - (QM-A)
MN 85/90 mm (EPM 2000)
Extraction thimbles
Cement / Steel / Mining Industry
Glass Microfiber Filters
Extraction Thimbles
Qualitative & Quantitative Filter Papers
Silica / Silicon Test Kit & Refill
Ashless Floc
Ashless Clippings
Air Monitoring
Glass Microfiber Filters
MN QF 10 - (QM-A)
MN 85/90 mm (EPM 2000)
PFTE Membranes
Extraction thimbles
Water Analysis
Water Hardness Kit
Cellulose Filter Papers
Glass Microfiber Filters
MN 85/90 mm (EPM 2000)
Syringe filters
Food and Beverage - QA/QC
Cellulose Filter Papers
Special Filter paper for Malt and Beer
Glass Microfiber Filters
Weighing boats
Syringe Filters
Chromatography Paper
TLC Plates

Forensics, Human ID
Guthrie Test Card
TLC Plates
Cellulose Papers
Syringe Filters
Textile Industry
Specialty filter paper for textile industry Vat Dyes
Chemical Process Industries
TLC Plates
Rapid Test Kits
Water Analysis Kits
Pharmaceutical, Biotechnology
Glass Microfiber Filters
Chromatography Papers
Surface Protection Paper Lab - Top
pH paper
HPLC Products 90
Microbiology
Syringe Filters
pH paper
Chromatography
HPLC Products
Ion Exchange Paper
Pharmacokinetics & Pre-clinical research
TLC Plates
Life Sciences Research
Glass Microfiber Filters
Chromatography Papers
Syringe Filters
HPLC Products
Specialty Products
Shark Skin Paper
Specialty filter paper for textile industry Vat Dyes
Special Filter paper for Malt and Beer
Antibiotic Assay (AA) Discs
Surface Protectors
Lens Cleaning Tissue
Kjeldahl Weighing Boats
pH Indicator & Test Papers
Phase Separators
HPLC Products
Ion Exchange Papers

Filter papers

Raw materials and manufacture

For production of the high quality MN filter papers we use cotton linters, refined pulp with a high level of ∝-cellulose as well as glass fibres. Cotton linters are short-fibred seed hairs from cotton seeds, which cannot be used for textile purposes, but which are highly suitable for the manufacture of soft and absorbent filter papers.

In addition to cotton linters we use mainly pulp, which is obtained by chemical treatment of plant materials, e.g. coniferous or deciduous wood.

At MACHEREY-NAGEL only the most experienced paper specialists select the raw materials in order to ensure the continuosly high quality of our filter papers.

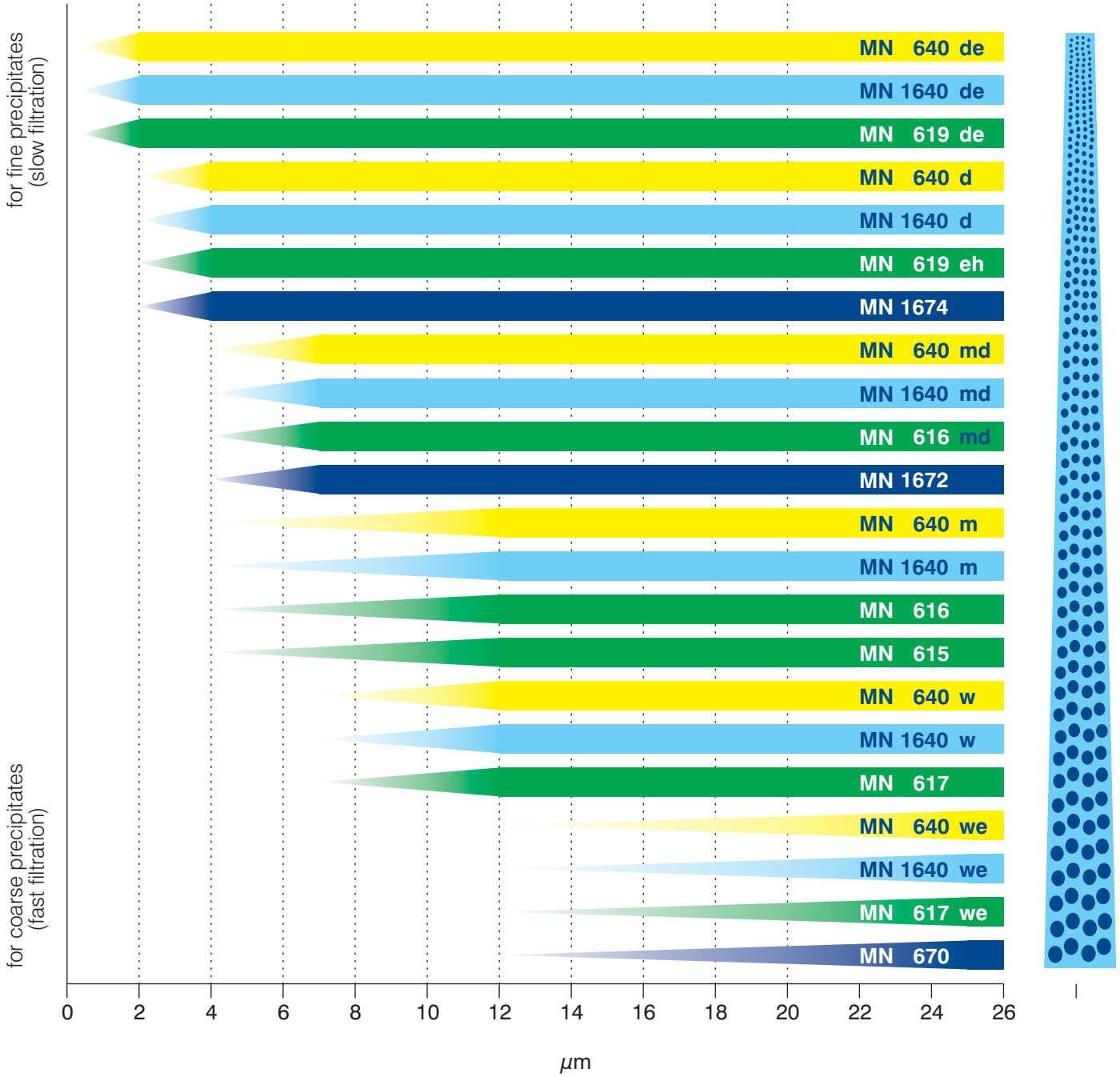
For the manufacturing of MN glass fibre filters we use staple fibres made from borosilicate glass (exception: paper from quartz fibres). With a diameter of 0.5 – 1.5 μm these glass fibres are considerably thinner than cellulose fibres. One of the most important feature of glass fibre filters is their resistance to almost all chemicals (exception e.g. hydrogen fluoride).

Important technical parameters of filter papers

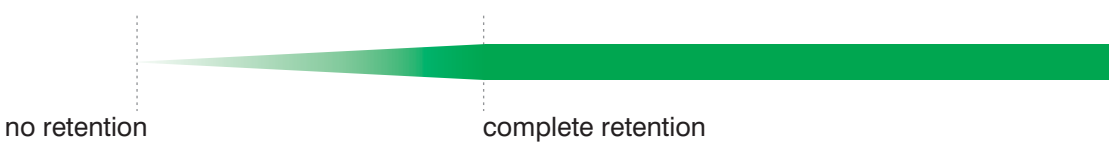
Parameter	Description
Ash content/ residue on ignition	The ash content is determined in accordance with DIN 54370: 10 g filter paper are weighed after ignition in a platinum crucible at 800 °C. Results are expressed as % of original paper weight.
Dry bursting strength	For determination of the dry bursting strength the paper is clamped over a rubber diaphragm with an area of 10 cm^2. The strain on the paper is then increased by applying an increasing air pressure, until the paper bursts. The dry bursting strength in accordance with DIN 53113 is stated in Kpa.
Tensile strength	For determination of the tensile strength a paper strip (measuring 180 x 15 mm) is subjected to vertical strain by applying increasing weight. The force expended at the moment of tearing represents the tensile strength. Results are expressed in N/15 mm.
Thickness	The thickness of a paper is measured with a touch pressure device. Especially for soft and creped papers it is important that the touch pressure is not too high. Otherwise the papers are compressed and a falsely low thickness is obtained.
Filtration speed	For determination of the filtration speed in accordance with DIN 53137 the duration of flow of 10 ml distilled water through a quadrant-folded, freely suspended filter circle of 12.5 cm diameter is measured. Results are expressed in seconds.
Basis weight	The basis weight is determined for a sample of 10 x 10 cm. It is measured in g/m^2.
Gurley test	The Gurley test measures the time required for filtration of 100 ml air at a water column pressure of 31 mm. The sample has an area of ¼ sq. inch.
Wet strength	The wet strength of a paper is a measure for the mechanical stability of a paper in a wet or moist condition. For example, it can be determined as the tensile strength or the bursting strength (see above).
Pore size	The retention efficiency of a filter paper is influenced by several factors. Since filter papers are deep-bed filters, one usually refers to a mean particle retention.
Capillary rise according to Klemm	The capillary rise according to Klemm indicates how far a strip of filter paper is moistened in 10 min when vertically dipped with one end into distilled water (20 °C).
Particle retention	Particle retention refers to the efficiency of filter papers in retaining certain precipitates. It is characterised by the permeability of the paper for precipitates of iron(III) oxyhydrate, lead sulphate, calcium oxalate and barium sulphate.

Particle retention chart of filter papers

The particle retention capacity is an important parameter for characterising a filter paper. The following diagram shows typical values of our analytical filter papers



How to read the graph



Standard filter papers for qualitative analysis

Qualitative filter papers are manufactured from the same raw materials as the ashless grades and are particularly suited for general laboratory filtrations. The average ash content is about 0.1%, the amount of a αcellulose is about 95%.

Technical data

Grade		Properties	Thickness	Filtration speed	Basis weight
MN 617 we	≡ No. 4	extra soft, fast filtration, smooth	0.22 mm	5 s	85 g/m²
MN 617		soft, fast filtration, smooth	0.2 mm	9 s	85 g/m²
MN 615A	≡ No. 1	medium speed, for general application	0.2 mm	20 s	80 g/m²
MN 615		medium fast filtration, smooth	0.16 mm	22 s	70 g/m²
MN 616	≡ No. 2	medium fast filtration, smooth	0.2 mm	27 s	85 g/m²
MN 618	≡ No. 3	medium fast filtration, smooth	0.32 mm	22 s	140 g/m²
MN 616 md		medium to slow filtration, smooth	0.2 mm	55 s	85 g/m²
MN 619		dense, slow filtration, smooth	0.17 mm	100 s	75 g/m²
MN 619 eh	≡ No. 6	dense, slow filtration, smooth	0.17 mm	140 s	85 g/m²
MN 619 de	≡ No. 5	extra dense, very slow filtration, smooth	0.2 mm	195 s 1	00 g/m²

Ordering Information

References for packs of 100 filters

Ø	MN 617 we	MN 615 A	MN 616	MN 618	MN 616 md	MN 619	MN 619 eh	MN 619 de
55 mm	43 50 05	40 06 05 A 005	43 20 05	43 60 05	43 30 05	43 70 05	43 80 05	43 90 05
70 mm	43 50 07	40 06 07 A 007	43 20 07	43 60 07	43 30 07	43 70 07	43 80 07	43 90 07
90 mm	43 50 09	40 06 09 A 009	43 20 09	43 60 09	43 30 09	43 70 09	43 80 09	43 90 09
110 mm	43 50 11	40 06 11 A 110	43 20 11	43 60 11	43 30 11	43 70 11	43 80 11	43 90 11
125 mm	43 50 12	40 06 12 A 125	43 20 12	43 60 12	43 30 12	43 70 12	43 80 12	43 90 12
150 mm	43 50 15	40 06 15 A 015	43 20 15	43 60 15	43 30 15	43 70 15	43 80 15	43 90 15
185 mm	43 50 18	40 06 18 A 018	43 20 18	43 60 18	43 30 18	43 70 18	43 80 18	43 90 18
240 mm	43 50 24	40 06 24 A 024	43 20 24	43 60 24	43 30 24	43 70 24	43 80 24	43 90 24
320 mm	43 50 32	40 06 32 A 032	43 20 32	43 60 32	43 30 32	43 70 32	43 80 32	43 90 32

Qualitative Filter Papers

Standard Filters

MN 615 A ≡ No. 1

Diameter mm	Pack size	Cat No.	Price ₹
55	100	400615 A 005	670
70	100	400615 A 007	670
90	100	400615 A 009	540
110	100	400615 A 011	590
125	100	400615 A 012	720
150	100	400615 A 015	920
185	100	400615 A 018	1340
240	100	400615 A 024	2850
270	100	400615 A 027	3270
320	100	400615 A 032	3430
385	100	400615 A 038	5600
400	100	400615 A 040	7890
450	100	400615 A 045	9810
500	100	400615 A 050	11500
460 x 570 sheets	100	100615 A 004.1	7320
460 x 570 sheets	500	100615 A 004.2	26350
580 x 580 sheets	100	100615 A 010.1	9100
580 x 680 sheets	100	100615 A 010.2	14780

MN 616 ≡ No. 2

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	43200 425	670
55	100	43 20 05	670
70	100	43 20 07	760
90	100	43 20 09	760
110	100	43 20 11	840
125	100	43 20 12	920
150	100	43 20 15	1340
185	100	43 20 18	1850
240	100	43 20 24	3360
320	100	43 20 32	7640
460 x 570 sheets	100	100616.1	11840

MN 618 ≡ No. 3

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	43600 425	895
55	100	43 60 05	920
70	100	43 60 07	1090
90	100	43 60 09	1260
110	100	43 60 11	1090
125	100	43 60 12	1600
150	100	43 60 15	1600
185	100	43 60 18	3020
240	100	43 60 24	4870
320	100	43 60 32	9400
460 x 570 sheets	100	136040.1	20320

MN 617 we ≡ No. 4

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	43500 425	590
47	100	43500 427	590
55	100	43 50 05	590
70	100	43 50 07	610
90	100	43 50 09	670

MN 617 we ≡ No. 4

Diameter mm	Pack size	Cat No.	Price ₹
110	100	43 50 11	840
125	100	43 50 12	1010
150	100	43 50 15	1340
185	100	43 50 18	1930
240	100	43 50 24	3440
270	100	43 50 27	4200
320	100	43 50 32	5370
400	100	43 50 40	7980
460 x 570 sheets	100	135051.1	13940

MN 619 de ≡ No. 5

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	43900 425	590
55	100	43 90 05	670
70	100	43 90 07	760
90	100	43 90 09	840
110	100	43 90 11	920
125	100	43 90 12	1180
150	100	43 90 15	1850
185	100	43 90 18	2850
240	100	43 90 24	5120

MN 619 eh ≡ No. 6

Diameter mm	Pack size	Cat No.	Price ₹
70	100	43 80 07	840
90	100	43 80 09	920
110	100	43 80 11	1090
125	100	43 80 12	1340
150	100	43 80 15	1460
185	100	43 80 18	1610
240	100	43 80 24	1790

MN 616 md ¼ ≡ No. 2 V

Diameter mm	Pack size	Cat No.	Price ₹
55	100	53 30 05	1875
70	100	53 30 07	2152
90	100	53 30 09	2478
110	100	53 30 11	2962
125	100	53 30 12	3360
150	100	53 30 15	3610
185	100	53 30 18	4370
240	100	53 30 24	6040
270	100	53 30 27	7300
320	100	53 30 32	8300
400	100	53 30 40	18100
450	100	53 30 45	19800
500	100	53 30 50	21800

MN 617 we ¼ ≡ No. 114 V

Diameter mm	Pack size	Cat No.	Price ₹
90	100	53 50 09	1350
110	100	53 50 11	1580
125	100	53 50 12	1880
150	100	53 50 15	2550
185	100	53 50 18	4710

Filter papers for qualitative analysis

Wet-strengthened filter papers

Hardened analytical filter papers are manufactured from refined pulp and linters and feature a content of αcellulose of more than 95%. The smooth surface of these papers allows fibre-free filtration. They feature a high wet strength and can also be used in the filtration of strongly alkaline or strongly acidic solutions. Due to their high mechanical strength in wet condition they are particularly suited for applications, where the residue is removed from the filter e.g. with a spatula or a jet of water.

Technical data

Grade	Properties	Thickness	Filtration speed	Basis weight
MN 1670	wet-strengthened, fast filtration, smooth	0.13 mm	9 s	85 g/m²
MN 1672	wet-strengthened, medium fast filtration, smooth	0.13 mm	35 s	85 g/m²
MN 1674	wet-strengthened, slow filtration, smooth	0.13 mm	110 s	85 g/m²

Ordering Information

References for packs of 100 filters

Ø	MN 1670		MN 1672		MN 1674	
55 mm	47 00 05	57 00 05	47 20 05	57 20 05	47 40 05	57 40 05
70 mm	47 00 07	57 00 07	47 20 07	57 20 07	47 40 07	57 40 07
90 mm	47 00 09	57 00 09	47 20 09	57 20 09	47 40 09	57 40 09
110 mm	47 00 11	57 00 11	47 20 11	57 20 11	47 40 11	57 40 11
125 mm	47 00 12	57 00 12	47 20 12	57 20 12	47 40 12	57 40 12
150 mm	47 00 15	57 00 15	47 20 15	57 20 15	47 40 15	57 40 15
185 mm	47 00 18	57 00 18	47 20 18	57 20 18	47 40 18	57 40 18
240 mm	47 00 24	57 00 24	47 20 24	57 20 24	47 40 24	57 40 24
320 mm	47 00 32	57 00 32	47 20 32	57 20 32	47 40 32	57 40 32

Diameter mm	Pack size	Cat No.	Price ₹
MN 1674 ≡ No. 50			
55	100	47 40 05	1260
70	100	47 40 07	1510
90	100	47 40 09	1930
110	100	47 40 11	2850
125	100	47 40 12	3020
150	100	47 40 15	4370
185	100	47 40 18	6380
240	100	47 40 24	11420
320	100	47 40 32	17460
460 x 570 sheets	100	474101.1	35590
MN 1672 ≡ No. 52			
70	100	47 20 07	1840
90	100	47 20 09	2350
110	100	47 20 11	3020
125	100	47 20 12	3360
150	100	47 20 15	4280
240	100	47 20 24	11170

Diameter mm	Pack size	Cat No.	Price ₹
MN 1670 ≡ No. 54			
55	100	47 00 05	1260
70	100	47 00 07	1430
90	100	47 00 09	1930
110	100	47 00 11	2600
125	100	47 00 12	3110
150	100	47 00 15	4450
185	100	47 00 18	6300
240	100	47 00 24	11250
320	100	47 00 32	19980
320	100	47 00 50	45580
460 x 570 sheets	100	470011.1	56580

Quantitative Filter Papers

Ashless filter papers

Ashless filter papers are particularly suited for quantitative routine analysis and are manufactured from refined pulp and linters. They are acid-washed and have an extremely low ash content of < 0.01%. The amount of αcellulose is about 95%.

Technical data

Grade	Colour Code	Properties	Thickness	Filtration speed	Basis weight
MN 640 we ≡ No. 41		very fast filtration, smooth	0.22 mm	5 s	85 g/m²
MN 640 w	grey label ≡ black ribbon	fast filtration, smooth	0.2 mm	9 s	85 g/m²
MN 640 m ≡ No. 43	white label ≡ white ribbon	medium fast filtration, smooth	0.2 mm	27 s	85 g/m²
MN 640 md ≡ No. 40	yellow label ≡ red ribbon	medium to slow filtration, smooth	0.2 mm	55 s	85 g/m²
MN 640 dd ≡ No. 44	blue label ≡ green ribbon	slow filtration, smooth	0.16 mm	100 s	70 g/m²
MN 640 d	green label ≡ blue ribbon	slow filtration, smooth	0.17 mm	140 s	85 g/m²
MN 640 de ≡ No. 42		very slow filtration, smooth	0.2 mm	195 s	100 g/m²

Ordering Information

References for packs of 100 filters

Ø	MN 640 we	MN 640 w	MN 640 m	MN 640 md	MN 640 dd	MN 640 d	MN 640 de
55 mm	20 10 05	20 20 05	20 30 05	20 40 05	20 60 05	20 50 05	20 70 05
70 mm	20 10 07	20 20 07	20 30 07	20 40 07	20 60 07	20 50 07	20 70 07
90 mm	20 10 09	20 20 09	20 30 09	20 40 09	20 60 09	20 50 09	20 70 09
110 mm	20 10 11	20 20 11	20 30 11	20 40 11	20 60 11	20 50 11	20 70 11
125 mm	20 10 12	20 20 12	20 30 12	20 40 12	20 60 12	20 50 12	20 70 12
150 mm	20 10 15	20 20 15	20 30 15	20 40 15	20 60 15	20 50 15	20 70 15
185 mm	20 10 18	20 20 18	20 30 18	20 40 18	20 60 18	20 50 18	20 70 18
240 mm	20 10 24	20 20 24	20 30 24	20 40 24	20 60 24	20 50 24	20 70 24
320 mm	20 10 32	20 20 32	20 30 32	20 40 32	20 60 32	20 50 32	20 70 32

Filtration Products

Quantitative Filter Papers

Hardened filter papers for quantitative analysis

Ashless filter papers are particularly suited for quantitative routine analysis and are manufactured from refined pulp and linters. They are acid-washed and have an extremely low ash content of < 0.01%. The amount of αcellulose is about 95%.

Technical data

Grade	Properties	Thickness	Filtration speed	Basis weight
MN 1640 we	wet-strengthened, very fast filtration, smooth	0.22 mm	5 s	85 g/m²
MN 1640 w	wet-strengthened, fast filtration, smooth	0.2 mm	9 s	85 g/m²
MN 1640 m	wet-strengthened, medium fast filtration, smooth	0.2 mm	27 s	85 g/m²
MN 1640 md	wet-strengthened, medium to slow filtration, smooth	0.2 mm	55 s	85 g/m²
MN 1640 d	wet-strengthened, slow filtration, smooth	0.17 mm	140 s	85 g/m²
MN 1640 de	wet-strengthened, very slow filtration, smooth	0.2 mm	195 s	100 g/m²

Ordering Information

References for packs of 100 filters

Ø	MN 1640 we	MN 1640 w	MN 1640 m	MN 1640 md	MN 1640 d	MN 1640 de
55 mm	22 10 05	22 20 05	22 30 05	22 40 05	22 50 05	22 70 05
70 mm	22 10 07	22 20 07	22 30 07	22 40 07	22 50 07	22 70 07
90 mm	22 10 09	22 20 09	22 30 09	22 40 09	22 50 09	22 70 09
110 mm	22 10 11	22 20 11	22 30 11	22 40 11	22 50 11	22 70 11
125 mm	22 10 12	22 20 12	22 30 12	22 40 12	22 50 12	22 70 12
150 mm	22 10 15	22 20 15	22 30 15	22 40 15	22 50 15	22 70 15
185 mm	22 10 18	22 20 18	22 30 18	22 40 18	22 50 18	22 70 18
240 mm	22 10 24	22 20 24	22 30 24	22 40 24	22 50 24	22 70 24
320 mm	22 10 32	22 20 32	22 30 32	22 40 32	22 50 32	22 70 32

Filter aid

Filter flocs - Filter aids transform difficult precipitates and colloidal particles into a form which can be filtered more easily. When slimy and strongly lyophilic, swelling precipitates are involved, the fibres of the filter flocs prevent formation of a continuous, impermeable layer on the filter. The resulting filter cake remains porous and permeable, and clogging of the filter is prevented.

Technical data

Grade	Properties
MN 101	qualitative filter flocs
MN 2101	ashless, quantitative filter flocs

Ordering information

MN 101		MN 2101	
500 g	1000 g	500 g	1000 g
48 11 00	48 11 10	28 11 20	28 11 30

Filter papers for quantitative analysis

Ashless Filters

MN 640 md ≡ No. 40

Diameter mm	Pack size	Cat No.	Price ₹
12.7	**100**	**20400127.1**	**1510**
42.5	100	20400425	1510
47	100	20 40 47	1600
55	100	20 40 05	1180
70	100	20 40 07	1260
90	100	20 40 09	1600
110	100	20 40 11	1930
125	100	20 40 12	2350
150	100	20 40 15	3110
185	100	20 40 18	5120
240	100	20 40 24	10240
270	100	20 40 27	12500
320	100	20 40 32	16500
460 x 570 sheets	100	204101.1	30130

MN 640 we ≡ No. 41

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	20100425	1260
55	100	20 10 05	1260
70	100	20 10 07	1260
90	100	20 10 09	1680
110	100	20 10 11	2180
125	100	20 10 12	2520
150	100	20 10 15	3270
185	100	20 10 18	4950
240	100	20 10 24	9570
203 x 254 sheets	100	201115.1	15280
460 x 570 sheets	100	201101.1	29720

MN 640 de ≡ No. 42

Diameter mm	Pack size	Cat No.	Price ₹
42.5	100	20700425	1180
55	100	20 70 05	1090
70	100	20 70 07	1260
90	100	20 70 09	1600
110	100	20 70 11	2010
125	100	20 70 12	2350
150	100	20 70 15	3110
185	100	20 70 18	4950
240	100	20 70 24	7720
460 x 570 sheets	100	207101.1	30050

MN 640 m ≡ No. 43

Diameter mm	Pack size	Cat No.	Price ₹
90	100	20 30 09	1930
110	100	20 30 11	2600
125	100	20 30 12	2350
150	100	20 30 15	4110
185	100	20 30 18	6040

MN 640 dd ≡ No. 44

Diameter mm	Pack size	Cat No.	Price ₹
70	100	20 60 07	1510
90	100	20 60 09	1850
110	100	20 60 11	2100
125	100	20 60 12	2430
150	100	20 60 15	4110
185	100	20 60 18	6040
460 x 570 sheets	100	206112.1	39250

Hardened Ashless Filters

MN 1640 md ≡ No. 540

42.5	100	22400 425	1340
55	100	22 40 05	1430
70	100	22 40 07	1930
90	100	22 40 09	2690
110	100	22 40 11	2940
125	100	22 40 12	4370
150	100	22 40 15	4815
185	100	22 40 18	7390
240	100	22 40 24	12340

MN 1640 w ≡ No. 541

42.5	100	22200 425	1430
55	100	22 20 05	1430
70	100	22 20 07	1510
90	100	22 20 09	1930
110	100	22 20 11	2690
125	100	22 20 12	2800
150	100	22 20 15	4700
185	100	22 20 18	7390
240	100	22 20 24	12420
270	100	22 20 27	17380
320	100	22 20 32	22670
460 x 570 sheets	100	222101.1	44680

MN 1640 d ≡ No. 542

70	100	22 50 07	1510
90	100	22 50 09	2180
110	100	22 50 11	3020
125	100	22 50 12	3360
150	100	22 50 15	4950
185	100	22 50 18	7390

Filter Aid

MN 2101

Ashless floc	500 g	28 11 20	8500
Ashless floc	1000 g	28 11 30	15100
Ashless clippings	500 g	28 11 40	4030

Glass Microfibre Filters

Glass fibre filters / quartz fibre filters

Glass fibre filters allow a fast filtration and simultaneously a very high particle retention. They are manufactured from borosilicate glass fibres and are chemically resistant towards most organic and inorganic solvents (except HF). For the analysis of air-borne particles we recommend the quartz fibre filters MN QF-10 which feature an extremely low content of metal traces.

Technical data

Grade		Thickness	Basis weight	Filtration speed	Particle Retention	Max. Temp.	Binder
MN GF-1	≡ GF/A	0.3 mm	55 g/m²	12 s	0.7 µm	500 °C	without
MN GF-2	≡ GF/B	0.65 mm	140 g/m²	30 s	0.5 µm	500 °C	without
MN GF-3	≡ GF/C	0.28 mm	50 g/m²	25 s	0.6 µm	500 °C	without
MN GF-4	≡ GF/D	0.60 mm	120 g/m²	5 s	1.4 µm	500 °C	without
MN GF-5	≡ GF/F	0.40 mm	85 g/m²	80 s	0.4 µm	500 °C	without
MN GF-6		0.35 mm	70 g/m²	12 s	0.6 µm	500 °C	without
MN 85/70		0.35 mm	70 g/m²	15 s	0.6 µm	200 °C	organic
MN 85/70 BF		0.35 mm	70 g/m²	15 s	0.6 µm	500 °C	without
MN 85/90		0.40 mm	90 g/m²	15 s	0.5 µm	200 °C	organic
MN 85/90 BF		0.40 mm	90 g/m²	15 s	0.5 µm	500 °C	without
MN 85/220		1.0 mm	220 g/m²	15 s	0.4 µm	200 °C	organic
MN 85/220 BF		1.0 mm	220 g/m²	15 s	0.4 µm	500 °C	without
MN QF-10	≡ QM/A		85 g/m²	< 5 s	–	950 °C	without

Ordering Information

References for packs of 100 filters

Ø	MN GF-1	MN GF-2	MN GF-3	MN GF-4	MN GF-5	MN GF-6	MN 85/70
25 mm	41 10 025	41 20 025	41 30 025	41 40 025	41 50 025	41 60 025	40 30 025
37 mm	41 10 037	41 20 037	41 30 037	41 40 037	41 50 037	41 60 037	40 30 037
45 mm	41 10 045	41 20 045	41 30 045	41 40 045	41 50 045	41 60 045	40 30 045
55 mm	41 10 05	41 20 05	41 30 05	41 40 05	41 50 05	41 60 05	40 30 05
70 mm	41 10 07	41 20 07	41 30 07	41 40 07	41 50 07	41 60 07	40 30 07
90 mm	41 10 09	41 20 09	41 30 09	41 40 09	41 50 09	41 60 09	40 30 09
110 mm	41 10 11	41 20 11	41 30 11	41 40 11	41 50 11	41 60 11	40 30 11
125 mm	41 10 12	41 20 12	41 30 12	41 40 12	41 50 12	41 60 12	40 30 12
150 mm	41 10 15	41 20 15	41 30 15	41 40 15	41 50 15	41 60 15	40 30 15
185 mm	41 10 18	41 20 18	41 30 18	41 40 18	41 50 18	41 60 18	40 30 18
240 mm	41 10 24	41 20 24	41 30 24	41 40 24	41 50 24	41 60 24	40 30 24
270 mm	41 10 27	41 20 27	41 30 27	41 40 27	41 50 27	41 60 27	40 30 27

Ordering Information

References for packs of 100 filters

Ø	MN 85/70 BF	MN 85/90	MN 85/90 BF	MN 85/220	MN 85/220 BF	MN QF-10
25 mm	40 40 025	40 50 025	40 60 025	40 70 025	40 80 025	—
37 mm	40 40 037	40 50 037	40 60 037	40 70 037	40 80 037	41 70 037
45 mm	40 40 045	40 50 045	40 60 045	40 70 045	40 80 045	41 70 045
55 mm	40 40 05	40 50 05	40 60 05	40 70 05	40 80 05	41 70 05
70 mm	40 40 07	40 50 07	40 60 07	40 70 07	40 80 07	41 70 07
90 mm	40 40 09	40 50 09	40 60 09	40 70 09	40 80 09	41 70 09
110 mm	40 40 11	40 50 11	40 60 11	40 70 11	40 80 11	—
125 mm	40 40 12	40 50 12	40 60 12	40 70 12	40 80 12	41 70 12
150 mm	40 40 15	40 50 15	40 60 15	40 70 15	40 80 15	—
185 mm	40 40 18	40 50 18	40 60 18	40 70 18	—	—
240 mm	40 40 24	40 50 24	40 60 24	40 70 24	—	—
270 mm	40 40 27	40 50 27	40 60 27	40 70 27	—	—

Extraction thimbles

Extraction thimbles are often used for holding solid materials, from which certain substances are to be eluted (extracted) with a suitable solvent. Additionally, extraction thimbles are used in the fields of air and waste gas analysis for collecting solid particles (dust).

Extraction thimbles made from cellulose

Technical data

Grade	Properties
MN 645	standard grade, extraction thimbles made from pure cellulose
MN 645 D	extraction thimbles MN 645 with lid to prevent loss of contents
MN 645 F	extraction thimbles made from cellulose, denser than MN 645
MN 645 W	extraction thimbles made from cellulose, more permeable than MN 645
MN 645 R	extraction thimbles MN 645 with sealing collar and two finger recesses on opposite sides of the collar, for dust analysis in industrial gases, exhaust gases and room air

Extraction thimbles made from borosilicate glass

Technical data

Grade	Properties
MN 649	extraction thimbles made from glass microfibres without binder, short-term temperature resistance up to 500 °C, very high particle retention, for dust analysis in hot exhaust gases
MN 649 R	extraction thimbles MN 649 with sealing collar and two finger recesses on opposite sides of the collar, for dust analysis in industrial gases, exhaust gases and room air

Filtration Products

Glass Microfibre Filters

Diameter mm	Pack size	Cat No.	Price ₹
MN GF-1 [GF/A]			
25	100	41 10 025	1600
37	100	41 10 037	2180
42.5	100	41100 425	2270
47	100	41 10 047	2350
55	100	41 10 05	3110
70	100	41 10 07	3440
90	100	41 10 09	4450
110	100	41 10 11	5290
125	100	41 10 12	7390
150	100	41 10 15	9650
203 x 254 sheets	100	400GF1203.1	17290
460 x 570 sheets	25	400GF1005.1	22830
MN GF-2 [GF/B]			
24	100	41 20 024	1930
25	100	41 20 025	1930
37	100	41 20 037	3470
42.5	100	41200 425	4530
47	100	41 20 047	3430
55	100	41 20 05	5230
70	100	41 20 07	6150
90	25	41 20 09	3120
110	25	41 20 11	3850
125	25	41 20 12	5120
150	25	41 20 15	6550
460 x 570 sheets	25	400GF2003.1	59020
MN GF-3 [GF/C]			
24	100	41 30 024	1680
25	100	41 30 025	1600
37	100	41 30 037	2350
42.5	100	41300 425	2430
47	100	41 30 047	2520
55	100	41 30 05	3690
70	100	41 30 07	4950
90	100	41 30 09	5290
110	100	41 30 11	6880
125	100	41 30 12	8400
150	100	41 30 15	12340
102 x 254 Cell			
Harvesting Strips	50	400GF3003.1	7860
203 x 254	100	400GF3004.1	24210
460 x 570 sheets	25	400GF3046.1	27440
MN GF-4 [GF/D]			
24	100	41 40 024	3270
25	100	41 40 025	2010
47	100	41 40 047	4030
55	100	41 40 05	5120
70	100	41 40 07	6040
90	25	41 40 09	2850

Diameter mm	Pack size	Cat No.	Price ₹
MN GF-4 [GF/D]			
125	25	41 40 12	4950
150	25	41 40 15	8650
257	25	41 40 257	10240
MN GF-5 [GF/F]			
21	100	41 50 021	3270
24	100	41 50 024	3530
25	100	41 50 025	3530
37	100	41 50 037	7390
42.5	100	41500 425	6970
47	100	41 50 047	6970
55	100	41 50 05	10660
70	100	41 50 07	10660
90	25	41 50 09	5880
110	25	41 50 11	6380
125	25	41 50 12	8560
150	25	41 50 15	11170
257	25	41 50 257	31900
MN 85/90 [EPM 2000]			
47	100	40 50 047	4030
203 x 254 sheets	100	40085/90/003.1	31060
MN QF-10 [QM/A]			
47	100	41 70 047	12590
55	100	41 70 05	13650
70	100	41 70 07	16850
90	100	41 70 09	23050
110	100	41 70 11	44750
125	100	41 70 12	52300
150	100	41 70 15	60110
203 x 254 sheets	100	400GF6203.1	26900
MN 85/90BF [Acid Treated Low Metal TCLP Filters]			
47	100	40 60 047	10070
90	100	40 60 09	8060
110	100	40 60 11	11840
125	100	40 60 12	16710
142	100	40 60 142	20320
150	100	40 60 15	23420

Extraction Thimbles

Size mm	Pack size	Cat No.	Price ₹
Extraction Thimbles standard quality made of pure cellulose			
MN 645			
Thickness 1.0 mm			
8 x 40	25	64 50 01	6300
9 x 50	25	64 50 02	6300
15 x 50	25	64 50 04	6300
15 x 100	25	64 50 05	6300
19 x 90	25	64 50 56	6300
Thickness 1.5 mm			
20 x 80	25	64 50 05	6380
22 x 80	25	64 50 06	6380
23 x 90	25	64 50 07	6300
23 x 100	25	64 50 08	6300
27 x 80	25	64 50 09	6300
27 x 100	25	64 50 10	6300
27 x 60	25	64 50 11	6300
28 x 100	25	64 50 13	6300
28 x 120	25	64 50 14	7200
28 x 80	25	64 50 15	6300
28 x 900	25	64 50 16	6300
29 x 100	25	64 50 17	6600
30 x 150	25	64 50 18	8210
30 x 60	25	64 50 19	6300
30 x 80	25	64 50 20	6300
30 x 90	25	64 50 21	7300
33 x 94	25	64 50 22	10300
30 x 100	25	64 50 23	6760
31 x 118	25	64 50 24	8130
31 x 130	25	64 50 25	8130
33 x 205	25	64 50 26	11000
34 x 120	25	64 50 27	8130
34 x 150	25	64 50 28	11050
38 x 200	25	64 50 29	12840
Thickness 2.0 mm			
40 x 150	25	64 50 30	11490
40 x 123	25	64 50 31	11490
43 x 130	25	64 50 32	11490
48 x 145	25	64 50 33	13100
48 x 200	25	64 50 34	14950
48 x 230	25	64 50 35	14950
51 x 145	25	64 50 36	16000
51 x 180	25	64 50 37	16000
57 x 315	25	64 50 38	22030
60 x 180	25	64 50 39	27500
55 x 275	25	64 50 40	18460
75 x 160	25	64 50 41	17780
68 x 250	25	64 50 42	19660
70 x 330	25	64 50 43	24360

Size mm	Pack size	Cat No.	Price ₹
MN 645 D			
Thickness 1.5 mm			
30 x 80	25	64 52 20	9570
30 x 100	25	64 52 23	11190
31 x 130	25	64 52 25	13280
MN 645 F			
Thickness 1.5 mm			
22 x 80	25	64 54 06	7180
30 x 100	25	64 54 23	7180
Extraction Thimbles made of Pure Microglass Fibres high degree of permeability combined with extremely high separation capacity			
MN 649			
Thickness 1.0 mm			
Glass Fibre 15 x 50	25	64 91 03	11750
Glass Fibre 16 x 100	25	64 91 04	11750
Glass Fibre 22 x 80	25	64 91 06	11750
Glass Fibre 19 x 90	25	64 91 60	11750
Thickness 1.0 mm			
Glass Fibre 23 x 90	25	64 91 07	12150
Glass Fibre 23 x 100	25	64 91 08	12150
Glass Fibre 27 x 80	25	64 91 09	12150
Glass Fibre 28 x 60	25	64 91 11	12150
Glass Fibre 28 x 120	25	64 91 14	13140
Glass Fibre 30 x 150	25	64 91 18	16160
Glass Fibre 33 x 80	25	64 91 20	10380
Glass Fibre 33 x 90	25	64 91 21	12150
Glass Fibre 33 x 94	25	64 91 22	13140
Glass Fibre 33 x 100	25	64 91 23	13140
Glass Fibre 33 x 118	25	64 91 24	15000
Glass Fibre 33 x 205	25	64 91 26	20290
Glass Fibre 35 x 150	25	64 91 28	17720
Thickness 2.0 mm			
Glass Fibre 43 x 123	25	64 91 31	19350
Glass Fibre 48 x 230	25	64 91 35	27040
Glass Fibre 57 x 315	25	64 91 38	40690
Glass Fibre 75 x 330	25	64 91 43	45050
Filter Thimbles made of pure microglass fibres with sealing colour			
MN 645			
Thickness 1.0 mm			
Glass Fibre 79 x 15 102 mm	25	64 95 00	394200
Glass Fibre 27 x 55 50 mm	25	64 95 01	394200

In accordance with DIN 12449 for extractors with defined nominal volumes according to DIN 12602 and 12604

Filtration Products

Filter papers for technical applications

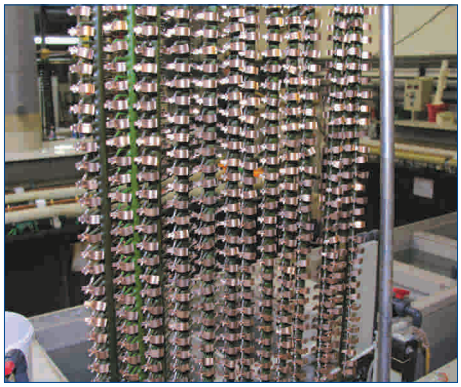
The filter papers listed below are mainly recommended for technical applications such as industrial filtrations. They are available as sheets, filter circles, folded filters (in part), cuts of almost any shape and as rolls. On request, we will be glad to produce other filter papers or filter papers with special properties as to customers demand.

Smooth and thick filter papers

Technical data

Grade	Application and properties	Thickness	Filtration speed	Basis weight
MN 713	medium speed, for general laboratory use	0.15 mm	20 s	70 g/m²
MN 615 A	medium speed, for general applications, slightly stronger than MN 615	0.20 mm	20 s	80 g/m²
MN 672	medium speed, very high wet strength, e.g. for sugar industry	0.20 mm	37 s	85 g/m²
MN 674	slow, very high wet-strength	0.19 mm	90 s	85 g/m²
MN 52 K	polyester paper with very high mechanical strength, also when wet (moist)	–	–	100 g/m²
MN 875	medium speed, e.g. for beverage industry	0.26 mm	25 s	120 g/m²
MN 918	fast, for filtration of large volumes of liquid	0.34 mm	9 s	120 g/m²
MN 625	medium speed, for general applications	0.26 mm	30 s	130 g/m²
MN 804	very fast, soft, e.g. beverage industry	0.40 mm	5 s	140 g/m²
MN 621	medium speed, wet-strengthened, e.g. for soil analysis	0.27 mm	40 s	130 g/m²
MN 728	slow, with about 30% activated charcoal for decolouring coloured liquids, e.g. for electroplating baths	0.40 mm	55 s	170 g/m²
MN 818	fast, strongly absorbent, e.g. for collection of blood drops (Guthrie test)	0.45 mm	8 s	180 g/m²
MN 960	fast, e.g. for beverage industry	0.45 mm	14 s	180 g/m²
MN 180	medium wet strength, hard, for technical filtrations	0.35 mm	45 s	180 g/m²
MN 675	slow, firm, for filtration of large volumes of liquid	0.35 mm	60 s	180 g/m²
MN 604	fast, thick, e.g. for beverage industry	0.40 mm	9 s	200 g/m²
MN 827	strongly absorbent, soft	0.70 mm	12 s	270 g/m²
MN 835	similar to MN 827, but wet-strengthened, e.g. for electroplating baths	0.70 mm	12 s	270 g/m²
MN 270	very high wet-strength, hard, for technical filtrations	0.54 mm	50 s	270 g/m²
MN 440	soft thick filter paper, e.g. for electroplating baths	1.0 mm	–	400 g/m²
MN 520	soft thick filter paper, e.g. for electroplating baths	1.5 mm	–	500 g/m²
MN 866	soft thick filter paper, e.g. for electroplating baths	1.7 mm	–	650 g/m²

other sizes and cuts on request



Filter papers for technical applications

Creped filter papers

Technical data

Grade	Application and properties	Thickness	Filtration speed	Basis weight
MN 850	very fast, thin, for fast filtration of small volumes of liquid	0.22 mm	3 s	53 g/m^2
MN 692	fast, for general applications	0.24 mm	20 s	70 g/m^2
MN 126/70	medium speed, wet-strengthened, for technical applications	0.20 mm	25 s	70 g/m^2
MN 751	medium speed for general applications	0.27 mm	12 s	75 g/m^2
MN 750 N	very fast, very high wet strength, e.g. for electroplating baths	0.20 mm	5 s	60 g/m^2
MN 553	medium speed, unbleached (brown paper) for applications requiring			
	high mechanical strength	0.20 mm	30 s	70 g/m^2
MN 753	medium speed, unbleached (brown paper) for applications requiring			
	high mechanical strength	0.34 mm	15 s	80 g/m^2
MN 651	fast, for general applications	0.30 mm	9 s	90 g/m^2
MN 605	very fast, soft, e.g. for filtration of paints and oils	0.35 mm	5 s	100 g/m^2
MN 651/120	fast, wet-strengthened	0.44 mm	9 s	120 g/m^2
MN 601	very fast, e.g. for clarification of essential oils	0.60 mm	2 s	140 g/m^2
MN 652	fast, wet-strengthened	0.45 mm	15 s	140 g/m^2
MN 606	very fast, e.g. for filtration of transformer oils	0.50 mm	8 s	150 g/m^2

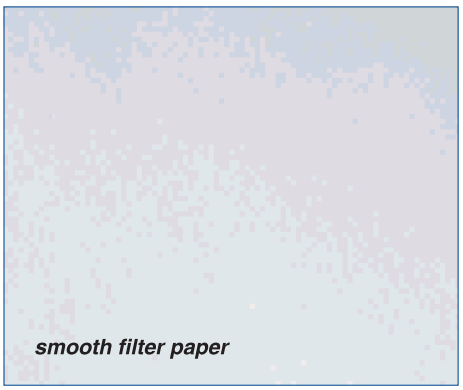
other sizes and cuts on request

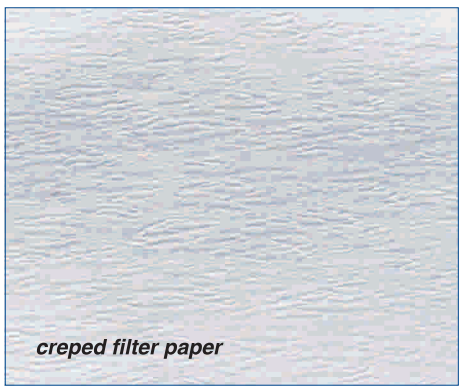
Embossed filter papers

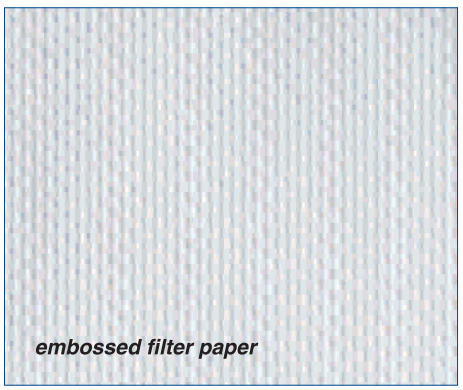
Technical data

Grade	Application and properties	Thickness	Filtration speed	Basis weight
MN 612	for general applications	0.20 mm	10 s	75 g/m^2
MN 614	for filtration of essential oils, emulsions, essences etc.	0.25 mm	20 s	75 g/m^2
MN 620	medium speed, unbleached (brown) e.g. for breweries	0.26 mm	20 s	75 g/m^2
MN 631	medium speed, unbleached (brown) e.g. for applications in sugar industry	0.20 mm	30 s	80 g/m^2

other sizes and cuts on request


smooth filter paper


creped filter paper


embossed filter paper

Filter papers for special applications

Product/application	MN Grade	
Activated charcoal paper	MN 728	
Antibiotic resistance tests	MN 827 ATD, MN 827 ATR, MN 827 ATS/8	
Black filter paper for detection of light precipitates	MN 220	
Blotting procedures	MN 218 B, MN 827 B, MN 440 B	
Breweries	MN 614, MN 312, MN 620	
Chromatography	MN 214, MN 214 ff, MN 218, MN 260, MN 261, MN 827, MN 866	
Fat analysis	MN 615 ff, MN 715	
Filter aids: filter flocs	MN 101, MN 2101	
Hydrophobic phase separation papers	MN 617 WA, MN 616 WA	
Ion exchange papers	MN 616 LSA-50, MN 616 LSB-50	
Kieselguhr paper	MN 660	
Lens paper (José tissue paper)	MN 13	
Microscopy, absorbent paper	MN 224	
Phosphate-free filters	MN 619 G, MN 616 G, MN 617 G	
Polyester paper	MN 52 K	
Soil analysis	MN 280 1/4, MN 619 G, MN 616 G, MN 617 G	
Surface protection paper Lab-Top, paper coated with PE	MN 210 PE	
Weighing aids	MN 808, MN 226, MN 40/25, MN 40	
Guthrie test cards	MN 818 GT	on request
Flue gas testing	MN 1817	on request
Smelling strips for the perfume industry	MN 270 S	on request
Cellulose tablets for X-ray fluorescence analysis	MN 2104 (pack of 500 tablets)	REF 481040
Sample supports, touch papers for Schöniger method	MN 640 mS	REF 486003
Sterilizing paper	MN 68	on request
Electrocardiographs, contact paper		on request
Nitrogen-free paper	MN 321	on request

Available sizes and ordering information on request

Activated charcoal filter paper

The activated charcoal filter paper MN 728 is particularly suited for the clarification and decolouring of solutions. The activated charcoal is incorporated in the paper and cannot be washed out into the filtrate.

Technical data

Grade	Thickness	Filtration speed	Basis weight
MN 728	0.4 mm	55 s	170 g/m^2

Size mm	Pack size	Cat No.	Price ₹
MN 728			
55	100	48 10 05	1000
70	100	48 10 07	1000
90	100	48 10 09	1430
110	100	48 10 11	1960
125	100	48 10 12	2370
150	100	48 10 15	3550
185	100	48 10 18	5190
240	100	48 10 24	9270
270	100	48 10 27	12030
320	100	48 10 32	15700

other sizes and cuts on request

Specialised Laboratory Products

Soil analysis, phosphate-free filters

MN 280 1/4: folded filters made from acid-washed paper with a high clarification efficiency for determination of micro nutrients available to vegetation

MN 619 G, phosphate-free: slow filtration, phosphate-free filter paper for soil analysis

MN 616 G, phosphate-free: medium fast filtration, phosphate-free filter paper

MN 617 G, phosphate-free: fast filtration, phosphate-free filter paper

Technical data

Grade	Properties	Thickness	Filtration speed	Basis weight
MN 280 ¼	smooth	0.18 mm	95 s	75 g/m²
MN 619 G	smooth	0.17 mm	100 s	75 g/m²
MN 616 G	smooth	0.20 mm	22 s	85 g/m²
MN 617 G	smooth	0.20 mm	9 s	85 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 280 ¼			
110	100	52 10 11	4040
125	100	52 10 12	4040
150	100	52 10 15	4040
185	100	52 10 18	5360
240	100	52 10 24	6940
MN 619 G			
55	100	44 00 05	420
70	100	44 00 07	420
90	100	44 00 09	540
110	100	44 00 11	690
125	100	44 00 12	780
150	100	44 00 15	1040
185	100	44 00 18	1400
240	100	44 00 24	2180
270	100	44 00 27	2820
320	100	44 00 32	3550

other sizes and cuts on request

Size mm	Pack size	Cat No.	Price ₹
MN 616 G			
55	100	48 30 05	520
70	100	48 30 07	620
90	100	48 30 09	710
110	100	48 30 11	790
125	100	48 30 12	1050
150	100	48 30 15	1320
185	100	48 30 18	1810
240	100	48 30 24	3050
320	100	48 30 32	4890
MN 617 G			
55	100	49 40 05	820
70	100	49 40 07	580
90	100	49 40 09	610
110	100	49 40 11	790
125	100	49 40 12	1050
150	100	49 40 15	1210
185	100	49 40 18	1710
240	100	49 40 24	2810
320	100	49 40 32	4890

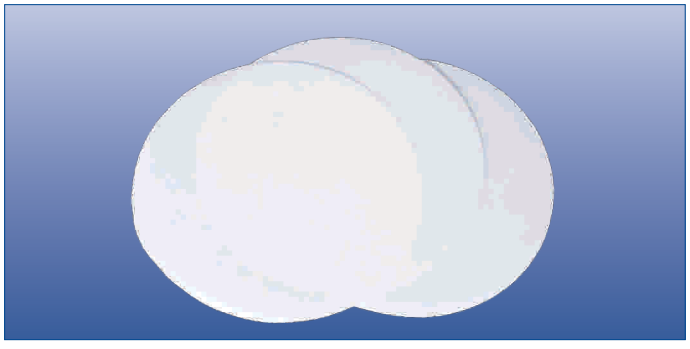
Polyester paper

This filters made from 100% polyester fibres features a very high mechanical strength in dry as well as in wet condition.

Technical data

Grade	Properties	Filtration speed	Basis weight
MN 52 K	hydrophobic polyester paper	0.17 s	100 g/m²

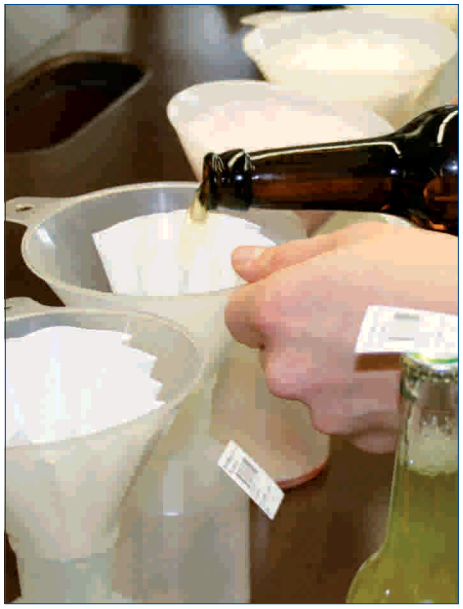
other sizes and cuts on request



Specialised Laboratory Products

Filter papers for breweries

The filter paper grade MN 620 can be used to efficiently decarbonate beer. MN 614 and the nitrogen-free MN 321 are used for malt analysis.



Technical data

Grade	Properties	Thick-ness	Filtration speed	Basis weight
MN 614	medium speed, embossed filter paper	0.25 mm	25 s	75 g/m²
MN 321	fast filtration, nitrogen free	0.23 mm	5 s	85 g/m²
MN 620	medium speed, embossed filter paper made from unbleached pulp.	0.26 mm	25 s	75 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 614			
55	100	42 70 05	420
70	100	42 70 07	480
90	100	42 70 09	510
110	100	42 70 11	580
125	100	42 70 12	740
150	100	42 70 15	1050
185	100	42 70 18	1360
240	100	42 70 24	2130
320	100	42 70 32	3360
MN 321			
90	100	41 00 09	435
110	100	41 00 11	510
125	100	41 00 12	590
150	100	41 00 15	730
185	100	41 00 18	1020
240	100	41 00 24	1710
320	100	44 00 32	2720

Size mm	Pack size	Cat No.	Price ₹
MN 620			
55	100	44 10 05	420
70	100	44 10 07	510
90	100	44 10 09	590
11	100	44 10 11	770
125	100	44 10 12	930
150	100	44 10 15	1200
185	100	44 10 18	1730
240	100	44 10 24	2850

other sizes and cuts on request

Fat Analysis

MN 615 ff: This paper is particularly suited for the analysis of fats. A special treatment with organic solvents guarantees that these filters are practically free of fats and resins (ethersoluble residue < 0.1 mg for a 27 cm filter circle).

MN 715: This paper is also suited for the analysis of fats. Careful selection of the raw materials ensures a low ethersoluble residue for these filters.

Technical data

Grade	Properties	Thickness	Filtration speed	Basis weight
MN 615 ff	smooth, washed with organic solvents	0.16 mm	22 s	70 g/m²
MN 715	smooth	0.16 mm	22 s	70 g/m²

Ordering Information

References for packs of 100 filters

Ø	MN 615ff	MN 715
55 mm	59 10 05	52 80 05
70 mm	59 10 07	52 80 07
90 mm	59 10 09	52 80 09
110 mm	59 10 11	52 80 11
125 mm	59 10 12	52 80 12
150 mm	59 10 15	52 80 15
185 mm	59 10 18	52 80 18
240 mm	59 10 24	52 80 24
270 mm	59 10 27	52 80 27
320 mm	—	56 80 32

other sizes and cuts on request
Price on request

Specialised Laboratory Products

Kieselguhr paper MN 660

This filter paper retains very fine turbidities and is e.g. recommended for the clarification of urines or sugar solutions.

Technical data

Grade	Thickness	Basis weight
MN 660	0.18 mm	75 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 660			
90	100	44 70 09	1110
110	100	44 70 11	1530
125	100	44 70 12	1900
150	100	44 70 15	2780
185	100	44 70 18	4210
240	100	44 70 24	6230
320	100	44 70 32	9360

other sizes and cuts on request

Black filter paper for the detection of light precipitates

This filter paper, which is dyed black with a sulphur dye, is used to identify small quantities of light precipitates. For example, it is used for the detection of fluorine or silicon.

Technical data

Grade	Thickness	Filtration speed	Basis weight
MN 220	0.17 mm	45 s	85 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 220			
55	100	40 90 05	1110
70	100	40 90 07	1530
90	100	40 90 09	1110
110	100	40 90 11	1530
125	100	40 90 12	1900
150	100	40 90 15	2780
185	100	40 90 18	4210

other sizes and cuts on request

Hydrophobic phase separation papers

These papers are made hydrophobic (impermeable to water) by impregnation with a silicone. With the aid of these filters, water can be separated from water-immiscible organic solvents in an elegant manner, by means of a simple filtration.

Technical data

Grade	Properties	Thickness	Filtration speed	Basis weight
MN 617 WA	smooth	0.2 mm	fast	85 g/m2
MN 616 WA	smooth	0.2 mm	medium fast	85 g/m2

Ordering Information

References for packs of 100 filters

Ø	MN 617 WA	MN 616 WA	
			
55 mm	—	48 40 05	—
70 mm	—	48 40 07	—
90 mm	43 00 09	48 40 09	58 40 09
110 mm	43 00 11	48 40 11	58 40 11
125 mm	43 00 12	48 40 12	58 40 12
150 mm	43 00 15	48 40 15	58 40 15
185 mm	43 00 18	48 40 18	58 40 18
240 mm	43 00 24	48 40 24	58 40 24
320 mm	—	48 40 32	58 40 32

other sizes and cuts on request

Size mm	Pack size	Cat No.	Price ₹
MN 617 WA			
90	100	43 00 09	2600
110	100	43 00 11	3860
125	100	43 00 12	4200
150	100	43 00 15	6300
185	100	43 00 18	10830
240	100	43 00 24	15780

Size mm	Pack size	Cat No.	Price ₹
MN 616 WA			
90	100	48 40 09	3550
110	100	48 40 11	3550
125	100	48 40 12	3550
150	100	48 40 15	3550
185	100	48 40 18	4330
240	100	48 40 24	6500
320	100	48 40 32	10260

Specialised Laboratory Products

Weighing aids

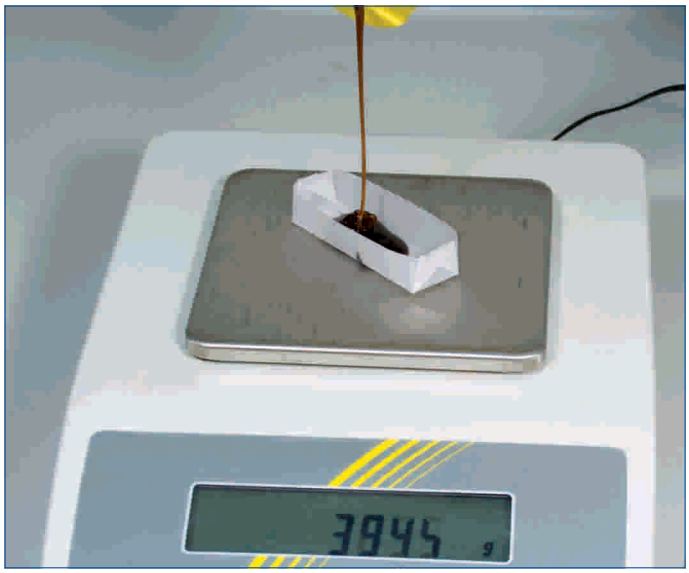
Weighing boats MN 808: Weighing boats MN 808 are made from a special, nitrogen-free parchment. They are used to weigh viscous or syrupy substances.

Weighing paper MN 226: This is a transparent paper, smooth on both sides, which can be used as substitute for weighing boats. The smooth surface of the paper guarantees that the weighed goods can be transferred without loss.

Parchment sheets MN 40/25: These easily crushable (not wet-strengthened) parchment papers are mainly used in the sugar industry for weighing syrupy and semi-crystalline substances.

Technical data

Grade	Properties	Basis weight
MN 808	weighing boats	n.a.
MN 226	transparent, smooth	40 g/m²
MN 40/25	crushable parchment paper	25 g/m²



Size mm	Pack size	Cat No.	Price ₹
MN 808			
58 x 10 x 10	100	48 60 00	9910
70 x 23 x 15	100	48 60 01	13500
MN 226			
Block with 100 sheets			
90 x 115	1 block	18 60 02	1770
MN 40/25			
Crushable parchment paper			
100 x 100	100	19 40 00	2150

Special paper for Textile Industries (Vat Dyes)

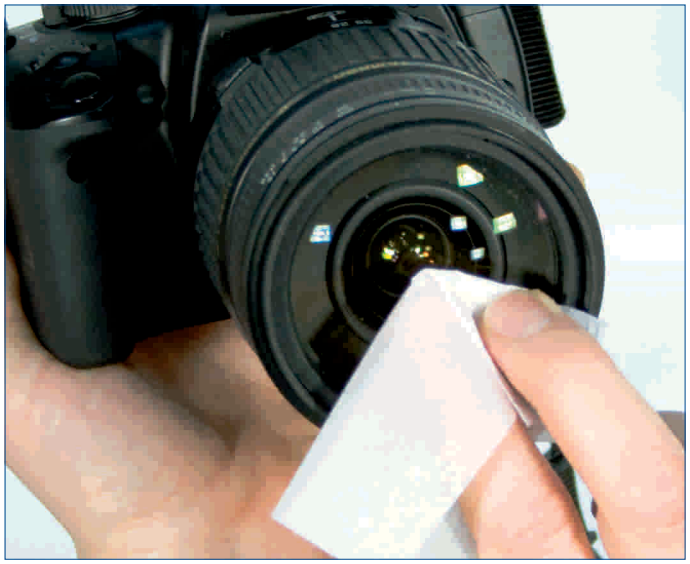
MN 918			
70	100	46 10 07	1050
90	100	46 10 09	1350

Lens tissue paper (José paper)

Thin, soft, non-fluffing tissue paper for cleaning optical glasses, cuvettes, also suitable as protective paper for metallographic sections

Technical data

Grade	Properties	Basis weight
MN 13	very thin, smooth	13 g/m²



Size mm	Pack size	Cat No.	Price ₹
MN 13			
120 x 120	500	41 81 01	5500
360 x 480	500	41 81 02	18700
Block with 50 sheets			
80 x 100	1 block	11 80 00	2150

Microscopy

Paper with good absorbent properties for absorbing liquids from microscopic preparations

Technical data

Grade	Properties	Thick-ness	Migration distance	Basis weight
MN 224	for absorbing liquids	0.2 mm	125 mm/30 min	90 g/m²

Ordering Information

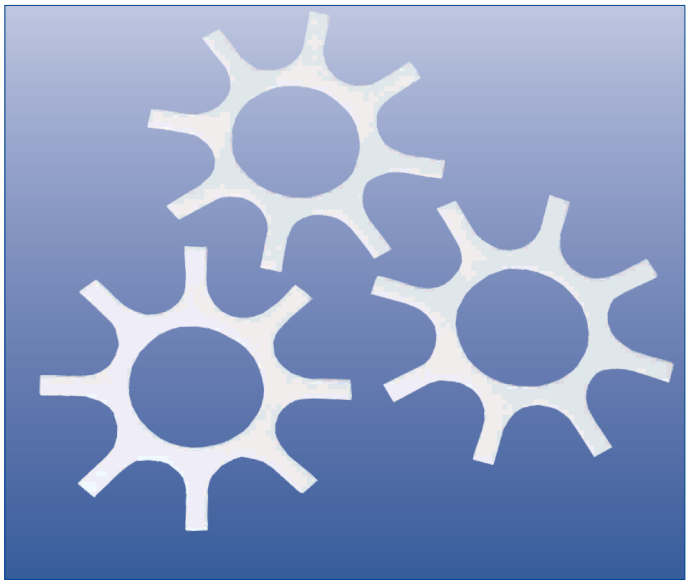
MN 224		
Presentation	**Pack of**	**Cat No.**
blocks of 50 sheets 37 x 100 mm	100 blocks	18 50 00

Price on request

Specialised Laboratory Products

Antibiotic resistance testing

These products are used in testing the resistance of pathogens to antibiotics. For this test the filter paper sections can be impregnated with the antibiotic to be tested and placed on the inoculated nutrient medium. Depending on the effectiveness, a smaller or larger zone of inhibition is formed. MACHEREY-NAGEL only supplies non-impregnated filter paper sections!



Technical data

Grade	Thickness	Filtration speed	Basis weight
MN 827	0.7 mm	12 s	270 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 827			
6	1000	48 40 00	3100
9	1000	48 40 01	3700

other sizes and cuts on request

Ion exchange papers

MN 616 LSA-50: Filter paper with strongly acidic cation exchange resin; matrix polystyrene crosslinked with 8.5% DVB; active groups SO3H, strongly acidic, supplied in H+ form; capacity 2.0 mval/g, applicable up to 100 °C.

A folded filter of 15 cm diameter is sufficient to demineralize 100 ml of water with a hardness of 10° d.

MN 616 LSB-50: Filter paper with strongly basic anion exchange resin; matrix polystyrene crosslinked with 6% DBV; active groups quaternary ammonium compounds, strongly basic; supplied in OH– form; capacity 1.3 mval/g, applicable up to 70 °C.

Technical data

Grade	Properties	Basis weight
MN 616 LSA-50	contains cationic exchange resin	100 g/m²
MN 616 LSB-50	contains anionic exchange resin	100 g/m²

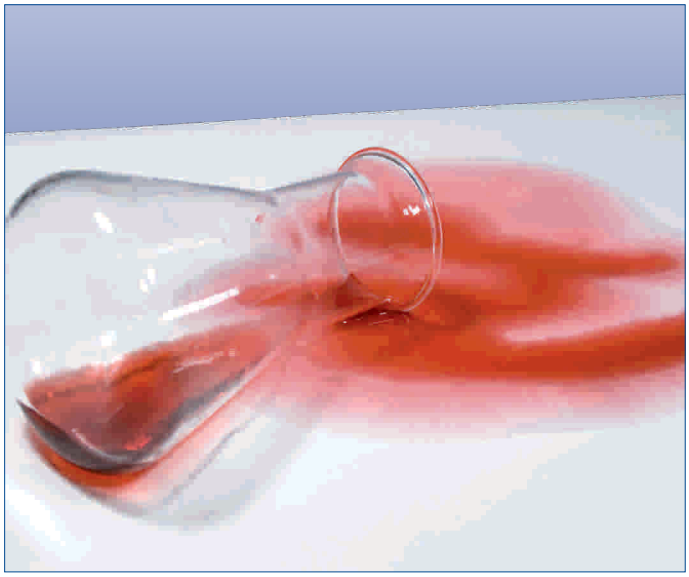
Ordering Information

Ø	MN 616 LSA-50	MN 616 LSB-50
48 mm	43 21 10	43 21 20

other sizes and cuts on request

Surface protection paper LAB-TOP

Filter paper coated on one side with polyethylene, e.g. for covering laboratory workbenches. The filter paper absorbs spilt liquids. It is especially suited for isotope and bacteriological laboratories as well as for chemical storerooms and cupboards.



Technical data

Grade	Properties	Thickness	Basis Wt.
MN 210 PE	one side PE-coated	0.22 mm	140 g/m²

Size mm	Pack size	Cat No.	Price ₹
MN 210 PE			
480 x 600 mm sheets	100	11 20 00	15800
480 x 600 mm sheets	50	1120 00.1	10500
100 m x 480 mm roll	1	11 20 10	23310
100 m x 600 mm roll	1	11 20 20	24720
50 m x 600 mm roll	1	11 20 30	18320
50 m x 480 mm roll	1	11 20 50	14660

other sizes and cuts on request

Index

Analytical Chromatography

Section II

- **Summary of MN ready-to-use layers for TLC** 25
- **Standard silica layers of TLC** 26
  - ADAMANT 26
  - ALUGRAM® 26
  - SIL G 27
  - DURASIL 28
- **Standard layers with concentrating zone** 29
  - SILGUR 29
  - Nano-SILGUR 29
- **Nano silica layers for HPTLC** 30
  - Nano-ADAMANT 30
  - Nano-SIL 30
  - Nano-DURASIL 31
- **Modified RP** 31
  - Nano-SIL C18 31
  - RP-18 W/UV_{254} 32
  - RP-2 / UV_{254} 33
- **Modified silica layers for HPTLC** 33
  - Nano-SIL CN 33
  - Nano-SIL NH_2 34
  - Nano-SIL DIOL 34
  - HPTLC method development kits 35
- **Aluminium oxide layers** 35
  - Alox 35
- **Cellulose layers for TLC** 36
  - Cellulose MN 300 36
  - Cellulose MN 400 (AVICEL®) 36
  - Cellulose MN 300 PEI 37
  - Polyamide-6 37
  - Acetylated cellulose MN 300 37
- **Layers for special TLC separations** 37
  - CHIRALPLATE 37
  - SIL N-HR 38
  - SIL G-25 HR 38
  - SIL G-25 Tenside 38
  - Nano-SIL PAH 38
  - IONEX 39
  - Mixed layers for TLC 39
- **Accessories for TLC** 39
- **Adsorbents for TLC** 40
  - Silica 40
  - Polyamide 40
  - Cellulose MN 301 40
  - Fluorescent indicators 40
- **Syringe filters** 41
  - CHROMAFIL® syringe filters 41
  - CHROMAFIL® PA 41
  - CHROMAFIL® PTFE 41
  - CHROMAFIL® MV (Cellulose mixed Esters) 41
  - CHROMAFIL® PET 42
  - CHROMAFIL® CA 42
  - CHROMAFIL® PES 43
  - CHROMAFIL® GF 44
  - CHROMAFIL® PVDF 44
  - CHROMAFIL® RC 44
  - Chemical resistance of filter membranes 45

Summary of MN ready-to-use layers for TLC

Phase	Support*	Layer
Standard silica		
ADAMANT	G	Silica 60, improved binder system, optimized particle size distribution
SIL	G P A Ax	Silica 60, standard grade, particle size 5–17 µm
DURASIL	G	Silica 60, special binder system
SILGUR	G Ax	Silica 60 with kieselguhr concentrating zone
Unmodified silica for HPTLC		
Nano-SILGUR	G Ax	Nano silica 60 with kieselguhr concentrating zone
Nano-ADAMANT	G	Nano silica 60, improved binder system optimized particle size distribution
Nano-SIL	G A Ax	Nano silica 60, standard grade, particle size 2–10 µm
DURASIL	G	Nano silica 60, special binder system
Modified silica for HPTLC		
Nano-SIL C18-50 / Nano-SIL C18-100	G	Nano silica with partial or complete C18 modification
RP-18 W/UV_{254}	G A	Nano silica with partial octadecyl modification, wettable with water
RP-2 UV_{254}	G A	Silanized silica = dimethyl-modified nano silica 60
Nano-SIL CN	G A	Cyano-modified nano silica
Nano-SIL NH_2	G A	Amino-modified nano silica
Nano-SIL DIOL	G	Diol-modified nano silica
Aluminium oxide		
Alox-25 / Alox N	G P A	Aluminium oxide
Cellulose, unmodified and modified		
CEL 300	G P A	Native fibrous cellulose MN 300
CEL 400	G P	Microcrystalline cellulose MN 400 (AVICEL®)
CEL 300 PEI	P	Polyethyleneimine-impregnated cellulose ion exchanger
CEL 300 AC	P	Acetylated cellulose MN 300
Layers for special separations		
POLYAMIDE-6	P	Perlon = ε-aminopolycaprolactame
CHIRALPLATE	G	RP silica with Cu2+ ions and chiral reagent, for enantiomer separation of amino acids
SIL N-HR	P	High purity silica 60, special binder system, higher gypsum content
SIL G-25 HR	G	High purity silica 60 with gypsum, recommended for aflatoxin analysis
SIL G-25 Tenside	G	Silica G with ammonium sulfate for separation of surfactants
Nano-SIL PAH	G	Nano silica with special impregnation for PAH analysis
IONEX-25 SA-Na	P	Mixed layer of strongly acidic cation exchanger and silica
IONEX-25 SB-AC	P	Mixed layer of strongly basic anion exchanger and silica
Alox/CEL-AC-Mix	G	Mixed layer of aluminium oxide and acetylated cellulose
SILCEL-Mix	G	Mixed layer of cellulose and silica

G = glass plates
P = POLYGRAM® polyester sheets
A = ALUGRAM® aluminium sheets
Ax = ALUGRAM® Xtra aluminium sheets

Analytical Chromatography

Standard silica layers for TLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

ADAMANT — unmodified standard silica layers

Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 5–17 µm

- Outstanding hardness and abrasion resistance due to an optimized binder system
- Increased separation efficiency due to an optimized particle size distribution
- High suitability for trace analyses resulting from a UV indicator with increased brilliance and a lownoise background of the layer

Ordering information TLC silica gel 60, Glass backed, Layer thickness: 250 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
ADAMANT – Glass plate Silica gel 60 G (Gypsum Binder)	821040	5 x 10	50	15744
	821040.200	5 x 10	200	35192
	821050	10 x 10	25	8798
	821060	20 x 20	25	20683
ADAMANT – Fluorescent Indicator - UV254	821005	2.5 x 7.5	100	23770
	821010	5 x 10	50	15744
	821010.200	5 x 10	200	35192
	821015	5 x 20	100	26857
	821020	10 x 10	25	8798
	821025	10 x 20	50	23461
	821030	20 x 20	25	20683

ALUGRAM® Xtra SIL G — unmodified standard silica layers on aluminium

Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 5–17 µm; standard grade

- Outstanding wettability for precise colorization results, even with 100 % aqueous detection reagents
- Excellent separation efficiency and reproducibility from lot to lot
- Easy and reliable cutting due to an optimized binder system, no flaking of silica

Binder: highly polymeric product, which is stable in almost all organic solvents and resistant towards aggressive visualization reagents; also completely stable in purely aqueous eluents

Ordering information TLC silica gel 60, Glass backed, Layer thickness: 200 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
ALUGRAM® Xtra – Aluminium plate SIL G	818230.20	5 x 7.5	20	2979
	818261	5 x 10	50	6577
	818232	5 x 20	50	8952
	818233	20 x 20	25	6500
ALUGRAM® Xtra – Aluminium plate SIL G/UV254	818329	2.5 x 7.5	200	16361
	818331	4 x 8	50	4569
	818330.20	5 x 7.5	20	2979
	818360	5 x 10	50	6930
	818332	5 x 20	50	8952
	818362	10 x 20	20	7702
	818333	20x 20	25	5500

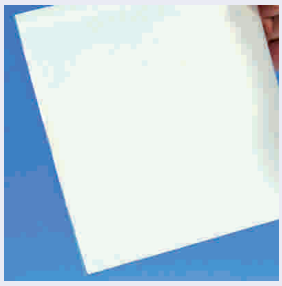
Standard silica layers for TLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

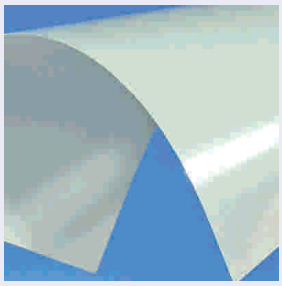
SIL G — unmodified standard silica layers

- Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 5–17 µm; standard grade
- Thickness of layer for analytical plates 0.25 mm, for preparative plates 0.5 and 1 mm; for 2 mm preparative layers a slightly coarser material is used
- Indicators: manganese activated zinc silicate with green fluorescence for short-wave UV (254 nm); special inorganic fluorescent pigment with blue fluorescence for long-wave UV (366 nm)
- Binders: highly polymeric products, which are stable in almost all organic solvents and resistant towards aggressive visualization reagents; binder system for POLYGRAM® sheets (as for ALUGRAM® Xtra sheets) is also completely stable in purely aqueous eluents

Ordering information TLC silica gel 60,Glass plates, Layer thickness: 250 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
SIL G-25	809017	5 x 10	50	15744
	809017.200	5 x 10	200	35192
	809011	5 x 20	100	26857
	809012	10 x 20	50	23461
	809013	20 x 20	25	20683
SIL G-25, UV254	809028.100	2.5 x 7.5	100	23770
	809027	5 x 10	50	15744
	809027.200	5 x 10	200	35192
	809021	5 x 20	100	26857
	809020	10 x 10	25	8798
	809022	10 x 20	50	23461
	809023	20x 20	25	20683
SIL G-25 UV254+366	809121	5 x 20	100	26857
	809122	10 x 20	50	23461
	809123	20x 20	25	19602
Pack of [plates] (preparative TLC), Layer thickness: 500 µm				
SIL G-50	809051	20 x 20	20	27783
SIL G-50 UV 254	809053	20 x 20	20	27783
Pack of [plates] (preparative TLC), Layer thickness: 1000 µm (1MM)				
SIL G-100	809061	20 x 20	15	28863
SIL G-100 UV 254	809063	20 x 20	15	28863
Pack of [plates] (preparative TLC), Layer thickness: 2000 µm (2MM)				
SIL G-200	809073	20 x 20	12	31179
SIL G-200 UV 254	809083	20 x 20	12	31179


Glass plates


ALUGRAM® aluminium sheets


POLYGRAM® polyester sheets

Analytical Chromatography

Standard silica layers for TLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

POLYGRAM® Polyester sheets, 200 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
SIL G	805902	2.5 x 7.5	200	16361
	805032	4 x 8	50	4569
	805012	5 x 20	50	8952
	805013	20 x 20	25	16207
	805014	5 x 20	25	29635
SIL G/UV254	805901	2.5 x 7.5	200	16361
	805021	4 x 8	50	4569
	805022	5 x 20	50	8952
	805023	20 x 20	25	16207
	805024	5 x 20	25	29365
	805017	40 x 20	25	15281
ALUGRAM® aluminium sheets, Layer thickness: 200 µm				
SIL G	818030.20	5 x 7.5	20	2979
	818161	5 x 10	50	6930
	818032	5 x 20	50	8952
	818163	10 x 20	20	7702
	818033	20 x 20	25	16207
SIL G/UV254	818129	2.5 x 7.5	200	16361
	818131	4 x 8	50	4569
	818130.20	5 x 10	20	2979
	818160	5 x 10	50	6930
	818132	5 x 20	50	8952
	818162	10 x 20	20	7702
	818133	20x 20	25	16207

DURASIL — unmodified standard silica layers

- Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 5–17 µm
- Hard, water-resistant and wettable layers due to a special binder system

TLC , Glass plates, Layer thickness: 250 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
DURASIL - 25	812003	10 x 20	50	23461
	812004	20 x 20	25	20683
SIL G-25, UV254	812005	5 x 10	50	15744
	812005.200	5 x 10	200	35192
	812006	5 x 20	100	26857
	812007	10 x 20	50	23461
	812008	20 x 20	25	20683

Silica layers with concentrating zone

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

SILGUR — unmodified standard silica layers with concentrating zone

- Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, Particle size 517 µm
- Thickness of layer for analytical plates 0.25 mm, for preparative plates 0.5 and 1 mm; for 2 mm preparative layers a slightly coarser material is used
- **Kieselguhr zone for rapid sample application:** because kieselguhr is completely inert towards a large number of compounds, the samples always form a narrow band at the interface of the two adsorbents, Irrespective of shape, size or position of the spots in the concentrating zone. Separation then takes place in the silica layer.
- Available as glass plate and as ALUGRAM® Xtra aluminium sheet with or without fluorescent indicator

Glass plates, Layer thickness: 250 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
SILGUR -25	810012	10 x 20	50	28863
	810013	20 x 20	25	22998
SILGUR-25, UV254	810022	10 x 20	50	28863
	810023	20 x 20	25	22998
ALUGRAM® Xtra Aluminum sheet (NEW)				
SILGUR	818412	10 x 20	20	8798
	818413	20 x 20	25	17133
SILGUR UV254	818422	10 x 20	20	8798
	818423	20 x 20	25	17133

Nano-SILGUR — unmodified HPTLC silica layers with concentrating zone

- Nano silica 60, specific surface (BET) ~ 500 m2/g, mean pore size 60 Å, Specific pore volume 0.75 mL /g, **particle size 210 µm**
- Narrow fractionation of the silica for sharper separations, shorter developing times, shorter migration distances, lower amount of samples and an increased detection sensitivity compared to SILGUR plates
- Kieselguhr zone for rapid sample application (see SILGUR above)

HPTLC , Glass plates, Layer thickness: 200 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
Nano-SILGUR -20	811032	10 x 10	25	27783
Nano-SILGUR-20, UV254	811042	10 x 10	25	27783
ALUGRAM® Xtra Aluminum sheet NEW! Layer thickness: 200 µm				
Nano-SILGUR	818432	10 x 10	25	26857
Nano-SILGUR, UV254	818442	10 x 10	25	26857

Analytical Chromatography

Nano silica layers for HPTLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

Nano-ADAMANT — unmodified HPTLC silica layers

- Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, **particle size 2 - 10 µm**
  - **Outstanding** hardness and **abrasion resistance** due to an optimized binder system
  - **Increased separation efficiency** due to an optimized particle size distribution
  - **High suitability for trace analyses** resulting from a UV indicator with increased brilliance and a low noise background of the layer
- Narrow fractionation of the silica particles allows theoretical plate heights, which are one order of magnitude smaller than on standard silica layers with the advantage of sharper separations, shorter developing times, shorter migration distances, Lower amount of samples, and increased detection sensitivity with equal selectivity.

HPTLC- Glass plates, Layer thickness: 200 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Nano-ADAMANT	821140	10 x 10	25	21146
	821150	10 x 20	50	50781
Nano-ADAMANT, UV254	821110	10 x 10	25	21146
	821120	10 x 20	50	50781

Nano-SIL — unmodified HPTLC silica layers

- Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, **particle size 2 - 10 µm**
  Indicator: manganese activated zinc silicate with green fluorescence for short-wave UV (254 nm)
  Binder: highly polymeric product, which is stable in almost all organic solvents and resistant towards aggressive visualization reagents
- Narrow fractionation of the silica particles allows sharper separations, shorter developing times, shorter migration distances, smaller samples and an increased detection sensitivity compared to SIL G plates.
- Available as glass plate and as ALUGRAM® Xtra aluminium sheet with or without fluorescent indicator

HPTLC silica gel 60,Glass plates, Layer thickness: 200 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Nano-SIL -20	811011	5 x 5	100	28092
	811012	10 x 10	25	21146
	811013	10 x 20	50	50781
Nano-SIL 20, UV254	811021	5 x 5	100	28092
	811022	10 x 10	25	21146
	811023	10 x 20	50	50781
ALUGRAM® Xtra aluminium sheets - NEW!				
Nano-SIL - G	818240	5 x 20	50	17905
	818241	20 x 20	25	30407
Nano-SIL G, UV254	818342	5 x 20	50	17905
	818343	20 x 20	25	30407
ALUGRAM® aluminium sheets				
Nano-SIL - G	818141	20 x 20	25	30407
Nano-SIL G, UV254	818143	20 x 20	25	30407

Nano silica layers for HPTLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

Nano-DURASIL — unmodified HPTLC silica layers

- Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 2 - 10 µm
- Indicator: manganese activated zinc silicate with green fluorescence for short-wave UV (254 nm)
  Hard, water-resistant and wettable layers due to a special binder system
- Narrow fractionation of the silica particles allows sharper separations, shorter developing times, shorter migration Distances, smaller samples and an increased detection sensitivity compared to DURASIL plates different selectivity compared to ADAMANT and SIL-G plates no reversed phase tendency, more polar than Nano-SIL

HPTLC silica gel 60,Glass plates, Layer thickness: 200 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Nano-DURASIL - 20	812010	10 x 10	25	21146
	812011	10 x 20	50	50781
Nano-DURASIL-20, UV254	812013	10 x 10	25	21146
	812014	10 x 20	50	50781

Modified RP silica layers for HPTLC

Nano-SIL C18 — Octadecyl-modified HPTLC silica layers

- Base material:
  - Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, **particle size 2 - 10 µm**, pH stability 2 - 10
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Partial (50 %) or complete (100 %) octadecyl modification, carbon content 7.5 and 14 %, respectively
- Order of polarity: silica > DIOL > NH_2 > CN > RP-2 > **C18-50** > RP-18 W > **C18-100**
- Reversed phase separation mode with eluents from anhydrous solvents to mixtures with high concentrations of water (see table and figure below)
- **Recommended application:**
  Alkaloids, amino acids, preservatives, optical brighteners, barbiturates, polycyclic aromatic hydrocarbons (PAH), drugs, peptides, flavonoids, phenols, indole derivatives, steroids

Ordering information HPTLC silica gel 60,Glass plates, Layer thickness: 200 µm

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Nano-SIL C18-50 {50 % silanized}	811054	10 x 10	25	43990
Nano-SIL C18-50 UV254 {50 % silanized}	811064	10 x 10	25	43990
Nano-SIL C18-50 {100 % silanized}	811052	10 x 10	25	43990
Nano-SIL C18-50 UV254 {100 % silanized}	811062	10 x 10	25	43990

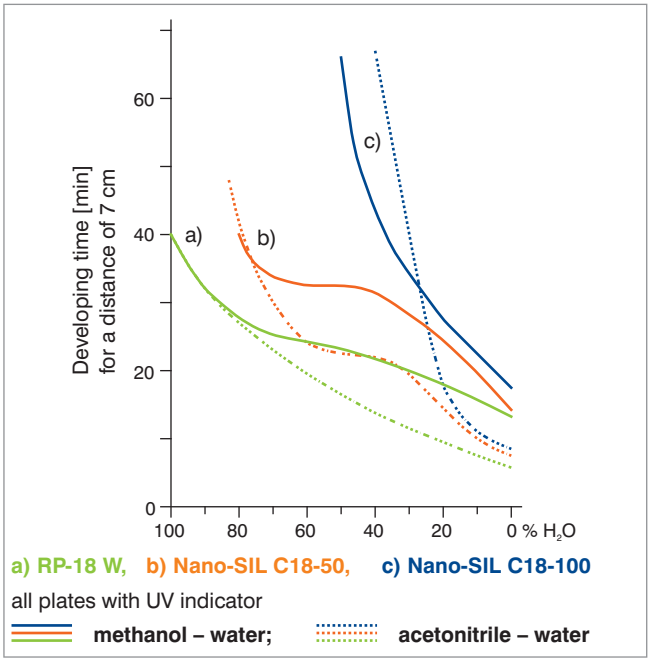
Modified RP silica layers for HPTLC

Migration of C18-50 and C18-100 silica layers as compared to RP-18 W plates

Eluent	v/v	Migration distances [mm/15 min] C18-50	C18-100	RP-18 W
Methanol – H_2O	2:1	57	45	44
	1:1	52	21	40
	1:2	50	0	43
	1:3	40	0	45
	1:4	30	0	46
	0:1	0	0	54
Acetonitrile – H_2O	2:1	62	46	66
	1:1	52	30	54
	1:2	51	27	46
	1:3	48	15	44
	1:9	20	0	42
Trichloromethane		68	64	71

For numerous separations with MN RP plates please visit our on-line application data base at ***www.mn-net.com/apps*** .

Elution properties of MN RP plates in mixtures of methanol – water and acetonitrile – water



a) RP-18 W, b) Nano-SIL C18-50, c) Nano-SIL C18-100
all plates with UV indicator
methanol – water; acetonitrile – water

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

RP-18 W/UV_{254} octadecyl-modified HPTLC silica layers

- Base material:
  - Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, **particle size 2 - 10 µm**,
    For **preparative plates** (1 mm thickness of layer) standard silica 60, particle size 517 µm pH stability 2 - 10
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Partial octadecyl (C18) modification, wettable with water, carbon content 14 %
- Order of polarity: silica > DIOL > NH_2 > CN > RP-2 > C18-50 > **RP-18 W** > C18-100
- NP or RP separation with eluents from anhydrous solvents to mixtures with high concentrations of water
- **Recommended application:** aminophenol, barbiturates, preservatives, nucleobases, polycyclic aromatic hydrocarbons, steroids, tetracyclines, Plasticizers (phthalates)

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
RP-18 W/UV254 HPTLC ,Glass plates, Layer thickness: 250 µm				
RP-18 W/UV254	811073	10 x 20	50	40748
	811075	10 x 10	25	30561
	811072	10 x 20	50	71310
	811071	20 x 20	25	56955
Preparative TLC, Layer thickness: 1000 µm (1.00 mm)				
RP-18 W/UV254	811074	20 X 20	15	73162
ALUGRAM® aluminium sheets , Layer thickness: 150 µm				
RP-18 W/UV254	818144	4 x 8	50	14663
	818152	5 x 10	50	17596
	818145	5 x 20	50	32722
	818147	10 x 10	25	16979
	818146	20 x 20	25	43681

Modified RP

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

RP-2 / UV_{254} — "silanized silica" = dimethyl-modified standard silica layers

- Base material:
  - Silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 5 -17 µm, pH stability 2 - 10
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Silanized silica with dimethyl modification, carbon content 4 %
- Order of polarity: silica > DIOL > NH_2 > CN > **RP-2** > C18-50 > RP-18 W > C18-100
- Normal phase or reversed phase separation modes with purely organic, organic - aqueous or purely aqueous eluents
- **Recommended application:** active plant constituents, steroids

RP-2/UV254 HPTLC, Glass plates, Layer thickness: 250 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
RP-2/UV254	811081	10 x 20	50	46151
	811082	20 x 20	25	33957
ALUGRAM® Xtra Aluminum sheet NEW! Layer thickness: 150 µm				
RP-2/UV254	818171	20 x 20	25	56955

Modified silica layers for HPTLC

Nano-SIL CN — cyano-modified HPTLC silica layers

- Base material:
  - Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 2 - 10 µm, pH stability 2 - 8
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Cyanopropyl modification, carbon content 5.5 %
- Order of polarity: silica > DIOL > NH_2 > **CN** > RP-2 > C18-50 > RP-18 W > C18-100
- Available as glass plates or ALUGRAM® aluminium sheets
- NP or RP separation modes depending on the polarity of the developing solvent
- **Recommended application:** steroid hormones, phenols, preservatives

Nano-SIL CN HPTLC ,Glass plates, Layer thickness: 200 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
Nano-SIL CN/UV	811115	10 x 10	25	42909
	811116	10 x 20	25	65599
ALUGRAM® aluminium sheets, Layer thickness: 150 µm				
Nano-SIL CN/UV	818184	4 x 8	50	23770

Modified silica layers for HPTLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

Nano-SIL NH_2 — cyano-modified HPTLC silica layers

- Base material:
  - Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, particle size 2 - 10 µm, pH stability 2 - 8
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Aminopropyl modification, carbon content 3.5 %
- Order of polarity: silica > DIOL > **NH_2** > CN > RP-2 > C18-50 > RP-18 W > C18-100
- Available with or without fluorescent indicator, as glass plates or ALUGRAM® aluminium sheets
- Layer can be wetted equally well with pure water as with organic solvents
- **Recommended application:**
  Vitamins, sugars, steroids, purine derivatives, xanthines, phenols, nucleotides and pesticides

Nano-SIL NH_2 HPTLC, Glass plates, Layer thickness: 200 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
Nano-SIL NH2/UV	811111	10 x 10	25	42909
	811112	10 x 20	25	65599
ALUGRAM® aluminium sheets, Layer thickness: 150 µm				
Nano-SIL NH2/UV	818182	4 x 8	50	23770

Nano-SIL DIOL — Diol-modified HPTLC silica layers

- Base material:
  - Nano silica 60, specific surface (BET) ~ 500 m^2/g, mean pore size 60 Å, specific pore volume 0.75 mL/g, **particle size 2 - 10 µm**, pH stability 2 - 8
  - Indicator: acid-resistant product with a pale blue fluorescence for short-wave UV (254 nm); UV-absorbing substances appear as dark-blue to black spots on a light-blue background
- Diol modification, carbon content 5.5 %
- Order of polarity: silica > **DIOL** > NH_2 > CN > RP-2 > C18-50 > RP-18 W > C18-100
- Available as glass plates or ALUGRAM® aluminium sheets
- Layer can be wetted equally well by pure water as by organic solvents
- **Recommended application:**
  Steroids, pesticides and plant constituents; for critical separations an alternative to silica, since it is less. Sensitive to the water content of the environment; leads to more reproducible results compared to silica

Nano- SIL DIOL HPTLC ,Glass plates, Layer thickness: 200 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
Nano- SIL DIOL /UV	811120	10 x 10	25	42909

Modified silica layers for HPTLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

HPTLC method development kits

- For selection of the optimum HPTLC plate for a given separation

Ordering information

Packing Material	Prod. Code	Price for Unit ₹
Glass plates: 3 plates 10 x 10 cm (scored to 5 x 10 cm) each of Nano-SIL C18-100/UV254, RP-18 W/UV254, RP-2/UV254, Nano-SIL CN/UV, Nano-SIL NH2/UV, Nano-SIL DIOL/UV	811001	32414
ALUGRAM® aluminium sheets: 5 sheets 4 x 8 cm each of RP-18 W/UV254, RP-2/UV254, Nano-SIL CN/UV, Nano-SIL NH2/UV, Nano-SIL DIOL/UV	818001	13428

Aluminium oxide layers for TLC

Alox — Aluminium oxide layers for TLC

- Aluminium oxide, specific surface (BET) ~ 200 m2/g, mean pore size 60 Å; inert organic binder
  Indicator manganese-activated zinc silicate
- **Recommended application:**
  Terpenes, alkaloids, steroids, aliphatic and aromatic compounds
  We recommend to activate aluminium oxide layers before use by heating 10 minutes at 120 °C.

TLC- Glass plates, Layer thickness: 250 µm				
Packing Material	**Prod. Code**	**Plate size [cm]**	**Pack of [plates]**	**Price for Unit ₹**
Alox-25 UV254	807021	5 x 20	100	26240
	807023	20 x 20	25	19139
Preparative TLC, Layer thickness: 1.00 mm				
Alox-100 UV254	807033	20 x 20	15	28246
POLYGRAM® polyester sheets, Layer thickness: 200 µm				
Alox N/UV254	802021	4 x 8	50	4955
	802022	5 x 20	50	11268
	802023	20 x 20	25	16979
ALUGRAM® polyester sheets, Layer thickness: 200 µm				
Alox N/UV254	881802	45 x 20	50	11268
	818023	20 x 20	25	16979

Analytical Chromatography

Cellulose layers for TLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

Cellulose MN 300 — native fibrous cellulose layers for TLC

- Fiber length (95 %) 2-20 µm, average degree of polymerization 400-500, specific surface acc. to Blaine 15000 cm^2/g
  ≤ 20 ppm Fe, 6 ppm Cu, 7 ppm P; CH_2Cl_2 extract ≤ 0.25 %; residue on ignition at 850 °C ≤ 1500 ppm
- **Recommended application:**
  Partition chromatography of polar substances such as amino acids, carboxylic acids or carbohydrates

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
TLC- Glass plates, Layer thickness: 100 µm				
CEL 300-10	808013	20 x 20	25	21146
CEL 300-10 UV254	808023	20 x 20	25	21146
TLC- Glass plates, Layer thickness: 250 µm				
CEL 300-25	808033	20 x 20	25	36118
CEL 300-25 UV254	808043	20 x 20	25	36118
Preparative TLC, Layer thickness: 500 µm				
CEL 300-50	808053	20 x 20	20	36118
CEL 300-50 UV254	808063	20 x 20	20	36118
POLYGRAM® polyester sheets, Layer thickness: 100 µm				
CEL 300	801011	4 x 8	50	4847
	801013	20 x 20	25	18522
CEL 300-UV254	801022	5 x 20	50	11731
	801023	20 x 20	25	18522
ALUGRAM® aluminium sheets, Layer thickness: 100 µm				
CEL 300	818155	4 x 8	50	4847
	818153	20 x 20	25	18522
CEL 300-UV254	818157	5 x 20	50	11731
	818156	20 x 20	25	18522

Cellulose MN 400 (AVICEL®) — microcrystalline cellulose layers for TLC

- Prepared by hydrolysis of high purity cellulose with HCl; average degree of polymerization 40200
- **Recommended application:**
  Carboxylic acids, lower alcohols, urea and purine derivatives

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
TLC- Glass plates, Layer thickness: 100 µm				
CEL 400-10	808072	10 x 20	50	29635
	808073	20 x 20	25	21146
POLYGRAM® polyester sheets, Layer thickness: 100 µm				
CEL 400	801113	20 x 20	25	18522
CEL 400 UV254	801123	20 x 20	25	18522

Cellulose layers for TLC

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

Cellulose MN 300 PEI — PEI-impregnated cellulose ion exchange layers

- Fibrous cellulose impregnated with polyethyleneimine
- **Recommended application:** analysis of nucleic acids, and of mutagenic substances with the 32P post labelling procedure (see application 402260 at www.mn-net.com/apps)

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
POLYGRAM® polyester sheets, Layer thickness: 100 µm				
CEL 300 PEI	801053	20 x 20	25	22689
CEL 300 PEI/UV254	801063	20 x 20	25	22689

Acetylated cellulose MN 300 — PEI-impregnated cellulose ion exchange layers

- Fibrous cellulose with 10 % content of acetylated cellulose for reversed phase chromatography

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
POLYGRAM® polyester sheets, Layer thickness: 100 µm				
CEL 300 AC-10 % (Acetyl content)	801033	20 x 20	25	23307

Polyamide-6 — ε-aminopolycaprolactame layers for TLC

- Polyamide 6 = Nylon 6 = perlon = ε-aminopolycaprolactame
  Separation mechanism based on hydrogen bonds to amide groups of the polymer matrix as well as on Ionic, dipole and electron donor-acceptor interactions
- **Recommended application:**
  Natural compounds, phenols, carboxylic acids, aromatic nitro compounds and especially amino acids

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Polyamide-6, Layer thickness: 100 µm				
POLYAMIDE-6	803012	5 x 20	50	15126
	803013	20 x 20	25	25776
POLYAMIDE-6 UV254	803022	5 x 20	50	15126
	803023	20 x 20	25	25776

Layers for special TLC separations

CHIRALPLATE — special layer for TLC enantiomer separation

- Reversed phase Nano silica impregnated with Cu2+ ions and a chiral selector (a proline derivative, DP 31 43 726 and EP 0 143 147)
  Separation based on ligand exchange, i.e. formation of ternary mixed-ligand complexes with the Cu(II)ions; differences in the stability of the diastereomeric complexes cause chromatographic separation
- **Recommended application:** venantiomer separation of amino acids, N-methylamino acids, N-formylamino Acids, α-alkylamino acids, thiazolidine derivatives, dipeptides, lactones, α-hydroxycarboxylic acids.
  A review on the application of CHIRALPLATE has been given by K. Günther [J. Chromatogr. **448** (1988) 1130].

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
TLC- Glass plates , Layer thickness: 250 µm				
CHIRALPLATE, UV254	811056	10 x 20	4	11422
	811057	5 x 20	50	65136
	811059	10 x 10	25	47540
	811055	10 x 20	25	57110
	811058	20 x 20	25	102180

Analytical Chromatography

Layers for special TLC separations

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

SIL N-HR — unmodified standard silica layers

- **High purity silica 60,** specific surface (BET) ~ 500 m2/g, mean pore size 60 Å,
  Specific pore volume 0.75 mL/g, particle size 5 - 17 µm
  Different binder system compared to SIL G results in different separation characteristics
- A special feature of the POLYGRAM® SIL N-HR is higher **gypsum content.**

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
POLYGRAM® polyester sheets, Layer thickness: 200 µm				
SIL N-HR/UV254	804022	5 x 20	50	9261
	804023	20 x 20	25	15898

SIL G-25 HR — special layer for aflatoxin separation

- High purity silica 60 with gypsum and a very small quantity of a polymeric organic binder
  Softer than the standard silica layer, i.e. spots can be scratched and the layer absorbs faster
- **Recommended application:** aflatoxins

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
SIL G-25 HR GLASS PLATES, Layer thickness: 250 µm				
SIL G-25 HR/UV254	809033	20 x 20	25	23616
	809043	20 x 20	25	23616

SIL G-25 Tenside — special layer for separation of surfactants

- Silica G impregnated with ammonium sulfate. Recommended for the separation of detergents, alkanesulfonates, polyglycols etc.

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
SIL G-25 Tenside GLASS PLATES, Layer thickness: 250 µm				
SIL G-25 Tenside	810063	20 x 20	25	26394

Nano-SIL PAH — special HPTLC silica layer for PAH analysis

- Base material: Nano silica 60, specific surface (BET) ~ 500 m2/g, mean pore size 60 Å,
  Specific pore volume 0.75 mL/g, particle size 210 µm; impregnated with caffeine, an electron acceptor for PAH analysis based on charge-transfer complexes
- **Recommended application:** 6 PAHs according to German drinking water specifications (TVO) in accordance with German standard DIN 38407 part 7 (see application 402400 at www.mn-net.com/apps)

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Nano SIL PAH, GLASS PLATES, Layer thickness: 200 µm				
Nano SIL PAH	811051	10 x 20	50	61431

Layers for special TLC separations

TLC and HPTLC Plates Manufactured by Macherey-Nagel GmbH & Co., Germany

IONEX — special mixed layers of silica with ion exchange resins

- **IONEX-25 SA-Na:** mixture of silica and a strongly acidic cation exchanger coated to polyester sheets
- **IONEX-25 SB-AC:** mixture of silica and a strongly basic anion exchanger coated to polyester sheets
  Both layers contain an inert organic binder
- **Recommended application:** Amino acids, e.g., in protein and peptide hydrolyzates, in seeds and fodder, in biological fluids; for racemate separation in peptide syntheses, for the separation of nucleic acid hydrolyzates, aminosugars, amino acids, antibiotics, inorganic phosphates, cations and other compounds with ionic groups

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
POLYGRAM® polyester sheets, Layer thickness: 200 µm				
IONEX-25 SA-Na, strongly acidic cation exchanger	806013	20 x 20	25	25776
IONEX-25 SB-AC, strongly basic anion exchanger	806023	20 x 20	25	25776

Mixed layers for TLC

- **Alox/CEL-AC-Mix-25:** mixed layer of aluminium oxide G and acetylated cellulose
  Recommended for separation of PAH (see application 401040 at www.mn-net.com/apps)
- **v SILCEL-Mix-25:** mixed layer of cellulose and silica
  Recommended for separation of preservatives and other antimicrobial compounds
  (See application 401420 at www.mn-net.com/apps)

Packing Material	Prod. Code	Plate size [cm]	Pack of [plates]	Price for Unit ₹
Glass plates, Layer thickness: 250 µm				
Alox/CEL-AC-Mix-25	810053	20 x 20	25	28863
SILCEL-Mix-25 UV254	810043	20 x 20	25	30870

Accessories for TLC

Ordering information

Description	Pack of	Prod. Code	Price for Unit ₹
Simultaneous developing chamber for TLC, 20 x 20 cm, for up to 5 plates	1	814019	41366
Simultaneous developing chamber for TLC, 10 x 10 cm, for up to 2 plates	1	814018	18676
Developing chambers for TLC micro-sets	4	814021	4615
Glass laboratory sprayer with rubber bulb	1	814101	16361
Glass capillaries 1 ìL	3 x 50	814022	9724
Rubber caps for capillaries 2	2	814102	1960
Plastic syringe, 1 mL content with graduation	1	814104	1960
Spotting guides	2	814023	3087
Measuring cylinders, glass, 10 mL content	2	814024	3087
MN ALUGRAM® scissors, ground blade, black handle	1	818666	2871
Filter paper MN 713, 15 x 21 cm	100	814103	3087

Analytical Chromatography

Adsorbents for TLC · Fluorescent indicators

TLC and Fluorescent indicators Manufactured by Macherey-Nagel GmbH & Co., Germany

Silica — adsorbents for TLC

Pore size 60 Å, pore volume 0.75 mL/g, specific surface (BET) ~ 500 m^2/g, pH 7 for a 10 % aqueous suspension

Silica G : standard grade, particle size 2–20 µm, Fe < 0.02 %, Cl < 0.02 %, 13 % gypsum as binder, supplied with or without Fluorescence indicator Uv254

Silica N : standard grade, particle size 2–20 µm, Fe < 0.02 %, Cl < 0.02 %, no binder, supplied with or Without fluorescence Indicator Uv254

Silica G-HR : high purity grade, particle size 3–20 µm, Fe < 0.002 %, Cl < 0.008 %, gypsum as binder supplied Without Fluorescence indicator

Silica P : preparative grade, particle size 5–50 µm, Fe < 0.02 %, Cl < 0.02 %, organic binder, supplied With fluorescence indicator Uv254

Silica P with Gypsum : preparative grade, particle size 5–50 µm, Fe < 0.02 %, Cl < 0.02 %, gypsum as binder, supplied With fluorescence indicator UV254

Ordering information and Price

Description	Fluorescent indicator	REF 1 Kg.	Price for Unit ₹	REF 5 Kg.	Price for Unit ₹
Silica G	–	816310.1	8644	816310.5	38588
Silica G/UV254	UV254	816320.1	9878	816320.5	41057
Silica N	–	816330.1	8644	816330.5	38588
Silica N/UV254	UV254	816340.1	9878	816340.5	41057
Silica G-HR	–	816410.1	18831	816410.5	79490
Silica P/UV254	UV254	816380.1	9878	816380.5	41057
Silica P/UV254 with gypsum	UV254	816400.1	7501	816400.5	33185

Polyamide — adsorbents for TLC

- Polyamide 6 = nylon 6 = perlon = ε-aminopolycaprolactame

Ordering information and Price

Description	Fluorescent indicator	REF 1 Kg.	Price for Unit ₹
Polyamide TLC 6	–	816610.1	82732
Polyamide TLC 6 Uv254	UV254	816620.1	97549

Cellulose MN 301 — native fibrous cellulose

Native fibrous cellulose, standard grade; fiber length (95 %) 2–20 µm, average degree of polymerization 400–500, specific surface acc. to Blaine 15000 cm2/g
= 20 ppm Fe, 6 ppm Cu, 7 ppm P, CH2Cl2 extract = 0.25 %, residue on ignition at 850 °C = 1500 ppm

Ordering information and Price

Description	Fluorescent indicator	REF 1 Kg.	Price for Unit ₹	REF 5 Kg.	Price for Unit ₹
Cellulose MN 301	-	816250.1	12194	816250.5	55875

Fluorescent indicators

UV indicators with efficient radiation for short-wave as well as long-wave UV ranges

Uv254: manganese activated zinc silicate with absorption maximum at 254 nm; green fluorescence; relatively susceptible towards acids; thus its fluorescence can be completely quenched by acidic solvents

Uv366: inorganic fluorescent pigment with absorption maximum at 366 nm; blue fluorescence

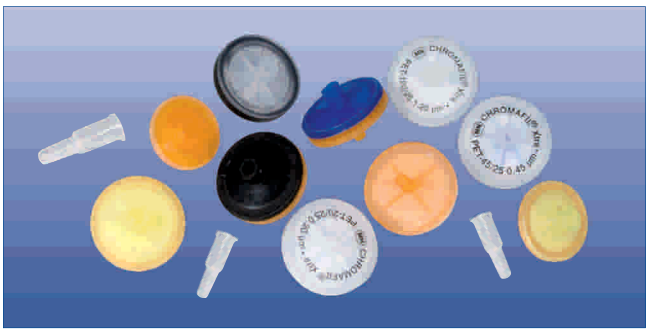
Price on request for Pack of 100g

CHROMAFIL® syringe filters

Disposable syringe filters CHROMAFIL® are ready-to-use filtration units, which are filter elements incorporated in a polypropylene housing. Because every filter is only used once, contaminations are avoided.

Recommended filter sizes for different volumes

Sample volume	Recommended filter Ø
≤ 1 ml	3 mm
1 - 10 ml	15 mm
10 - 100 ml	25 mm



CHROMAFIL® PA (Nylon)

- rather hydrophilic membrane
- for aqueous and organic/aqueous medium polar liquids

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
PA-20/25	0.20 µm	25 mm	labelled	—	100	72 92 12	8450.00
PA-45/25	0.45 µm	25 mm	labelled	—	100	72 92 13	8450.00
CHROMAFIL®							
AO-20/25	0.20 µm	25 mm	yellow	green	100	72 90 12	8450.00
AO-45/15	0.45 µm	25 mm	colourless	green	100	72 90 13	8450.00

CHROMAFIL® PTFE

- hydrophobic membrane
- for nonpolar liquids and gases
- very resistant towards all kinds of solvents as well as acids and bases flushing with alcohol, followed by water, makes the originally hydrophobic membrane more hydrophilic

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
PTFE-20/25	0.20 µm	25 mm	labelled	—	100	72 92 07	7300.00
PTFE-45/25	0.45 µm	25 mm	labelled	—	100	72 92 05	8500.00
CHROMAFIL®							
O-20/15 MS	0.20 µm	15 mm	yellow	colourless	100	72 90 08	6200.00
O-45/15 MS	0.45 µm	15 mm	colourless	colourless	100	72 90 09	6200.00
O-20/25	0.20 µm	25 mm	yellow	colourless	100	72 90 07	6100.00

MS = minispike on filter exit

CHROMAFIL® MV (Cellulose mixed Esters)

- hydrophilic membrane with very low adsorption
- for aqueous or polar solutions

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
MV-20/25	0.20 µm	25 mm	labelled	—	100	72 92 06	8450.00
MV-45/25	0.45 µm	25 mm	labelled	—	100	72 92 04	8450.00
CHROMAFIL®							
A-20/25	0.20 µm	25 mm	yellow	yellow	100	72 90 06	8450.00
A-45/25	0.45 µm	25 mm	colourless	yellow	100	72 90 04	8450.00

Analytical Chromatography

CHROMAFIL® PET

- hydrophilic multipurpose membrane
- for polar as well as nonpolar solvents the HPLC filter, especially suited for mixtures of water and organic solvents for TOC/DOC determination, not cytotoxic, does not inhibit the growth of microorganisms and higher cells
- polyester filter with integrated glass fibre prefilter (GF/PET): recommended for solutions with a high load of particulate matter or for highly viscous solutions

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
PET-20/25	0.20 µm	25 mm	labelled	—	100	72 92 21	8300.00
PET-45/25	0.45 µm	25 mm	labelled	—	100	72 92 20	8300.00
PET-120/25	1.2 µm	25 mm	labelled	—	100	72 92 29	7400.00
CHROMAFIL®							
PET-20/15 MS	0.20 µm	15 mm	yellow	orange	100	72 90 22	8300.00
PET-45/15 MS	0.45 µm	15 mm	colourless	orange	100	72 90 23	8300.00
PET-20/25	0.20 µm	25 mm	yellow	orange	100	72 90 21	8300.00
PET-45/25	0.45 µm	25 mm	colourless	orange	100	72 90 20	8300.00
PET-120/25	1.2 µm	25 mm	colourless	black	100	72 90 29	8300.00
GF/PET-20/25	1.0/0 20 µm	25 mm	blue	orange	100	72 90 32	8300.00
GF/PET-45/25	1.0/0.45 µm	25 mm	black	orange	100	72 90 33	8300.00

MS = minispike on filter exit

CHROMAFIL® CA

- hydrophilic membrane
- for filtration of water-soluble oligomers and polymers, especially suited for biological macromolecules
- very high shape stability in aqueous solutions
- extremely low binding capacity for proteins (21 µg/filter)
- also available in a sterile package (S) for filtration under sterile conditions (each filter individually sealed)

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
CA-20/25	0.20 µm	25 mm	labelled	—	100	72 92 26	8700.00
CA-45/25	0.45 µm	25 mm	labelled	—	100	72 92 27	8700.00
CHROMAFIL®							
CA-20/25	0.20 µm	25 mm	yellow	red	100	72 90 26	8700.00
CA-45/25	0.45 µm	25 mm	colourless	red	100	72 90 27	8700.00
CHROMAFIL® Sterile filters							
CA-20/25 S	0.20 µm	25 mm	yellow	red	50	72 90 24	9300.00
CA-45/25 S	0.45 µm	25 mm	colourless	red	50	72 90 25	9300.00

CHROMAFIL® PES

- hydrophilic membrane
- for aqueous and slightly organic liquids with higher flow rates
- very low adsorption for pharmaceuticals and proteins
- good stability against acids and bases
- for sterile filtration of non-sterile solutions we recommend the CHROMAFIL® Sterilizer PES (each filter individually sealed)
- binding capacity for proteins 29 µg/filter

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
PES-20/25	0.20 µm	25 mm	labelled	—	100	72 92 40	8800.00
PES-45/25	0.45 µm	25 mm	labelled	—	100	72 92 41	8800.00
PES-500/25	5.0 µm	25 mm	labelled	—	100	72 92 42	13300.00
CHROMAFIL®							
PES-20/25	0.20 µm	25 mm	yellow	amber	100	72 90 40	8800.00
PES-45/25	0.45 µm	25 mm	colourless	amber	100	72 90 41	8800.00
PES-500/25	5.0 µm	25 mm	red	amber	100	72 90 42	13300.00

Analytical Chromatography

CHROMAFIL® GF

- inert filter, nominal pore size 1 µm, allows higher flow rates than small pore filters
- for solutions with high loads of particulate matter or for highly viscous solutions (e. g. soil samples, fermentation broths)
- as prefilters for other CHROMAFIL® filters, they prevent plugging of the membrane

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
GF-100/25	nom. 1.0 µm	25 mm	labelled	—	100	72 92 28	13500.00
CHROMAFIL®							
GF-100/15 MS	nom. 1.0 µm	15 mm	blue	colourless	100	72 90 34	13500.00
GF-100/25	nom. 1.0 µm	25 mm	yellow	black	100	72 90 28	13500.00

CHROMAFIL® PVDF

- hydrophilic membrane
- for polar and nonpolar solutions, water-soluble oligomers and polymers like proteins
- binding capacity for proteins 82 µg/filter
- the PVDF filter with integrated glass fibre prefilter is recommended for filtration of biological samples with high particle loads. This filter features a high binding capacity for proteins.
- also suited for filtration of polar and nonpolar solutions

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
PVDF-20/25	0.20 µm	25 mm	labelled	—	100	72 92 18	9350.00
PVDF-45/25	0.45 µm	25 mm	labelled	—	100	72 92 19	9350.00
CHROMAFIL®							
P-20/25	0.20 µm	25 mm	yellow	white	100	72 90 18	9350.00
GF/P-45/25	1.0/0.45 µm	25 mm	black	white	100	72 90 39	9350.00

CHROMAFIL® RC

- hydrophilic membrane with very low adsorption
- for aqueous and organic/aqueous liquids, i. e. polar and medium polar sample solutions
- binding capacity for proteins 84 µg/filter

Ordering Information

Type	Pore size	Membrane Ø	Color Code Top	Color Code Bottom	Pack of	Cat No.	Price ₹
CHROMAFIL® Xtra							
RC-20/25	0.20 µm	25 mm	labelled	—	100	72 92 30	8400.00
RC-45/25	0.45 µm	25 mm	labelled	—	100	72 92 31	8400.00
CHROMAFIL®							
RC-20/15 MS	0.20 µm	15 mm	yellow	blue	100	72 90 36	8400.00
RC-45/15 MS	0.45 µm	15 mm	colourless	blue	100	72 90 37	8400.00
RC-20/25	0.20 µm	25 mm	yellow	blue	100	72 90 30	8400.00
RC-45/25	0.45 µm	25 mm	colourless	blue	100	72 90 31	8400.00

MS = minispike on filter exit

Chemical resistance of filter membranes

Substances	CA	CM/MV	NC	PC	PE/PET	TE/PTFE	RC	PA	PES	PVDF	GF
Hydrocarbons											
aliphatic hydrocarbons	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–
petroleum ether	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–
cyclohexane	⊕	⊕	–	–	⊕	⊕	⊕	○	⊕	⊕	–
aromatic hydrocarbons	⊕	⊕	○	○	⊕	⊕	⊕	○	⊕	⊕	–
benzene	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	⊕	⊕
chloroform	⊖	⊕	⊕	⊖	⊕	⊕	⊕	⊖	⊖	⊕	–
methylene chloride	⊖	⊕	–	–	⊕	⊕	⊕	⊖	⊖	○	–
trichloroethylene	⊕	⊕	⊕	⊖	⊕	⊕	⊕	○	⊖	⊕	⊕
tetrachloromethane	○	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊕	⊕
chlorobenzene, freon	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	⊖	–	–
gasoline	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–
acetonitrile	⊖	⊖	–	–	⊕	⊕	⊕	⊕	⊕	○	–
Alcohols											
methanol, 98%	⊕	⊖	⊖	⊖	⊖	○	⊕	⊕	⊕	⊕	–
butanol	⊕	⊕	⊕	⊕	⊕	⊕	⊕	○	⊕	○	⊕
ethanol, 98%	⊕	⊖	○	–	⊕	⊕	⊕	⊕	⊕	⊕	⊕
ethanol, 70%	⊕	○	○	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
isopropanol	⊕	⊕	○	⊕	⊕	⊕	⊕	⊕	⊕	⊕	
n-propanol	⊕	⊕	○	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
amyl alcohol	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	⊕	–	–
benzyl alcohol	○	○	⊕	○	⊕	⊕	⊕	–	⊕	–	–
ethylene glycol	⊕	○	○	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
glycerine	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	⊕	–	–
cyclohexanol	⊖	⊖	⊕	⊖	⊕	⊕	⊕	–	⊕	–	–
polyethylene glycol 400	⊖	⊖	–	–	⊕	⊕	⊕	⊕	⊕	○	–
Aldehydes, ketones											
acetaldehyde	⊖	⊖	–	–	⊕	⊕	⊕	○	–	⊖	⊕
acetone	⊖	⊖	⊖	⊖	○	⊕	⊕	⊕	⊖	○	⊕
cyclohexanone	⊖	⊖	⊖	⊖	○	⊕	⊕	–	⊖	–	–
methyl ethyl ketone	○	⊖	⊖	⊖	○	⊕	⊕	–	⊖	–	–
methyl isobutyl ketone	○	○	⊖	⊖	⊕	⊕	⊕		⊖		–
Esters											
methyl acetate	⊖	⊖	⊖	⊖	○	⊕	⊕	–	⊕	–	–
ethyl acetate	⊖	⊖	⊖	⊖	○	⊕	⊕	⊕	⊕	○	⊕
amyl, propyl, butyl acetate	○	⊖	⊖	⊕	⊕	⊕	⊕	–	⊕	–	–
methyl glycol acetate	○	⊖	○	⊕	⊕	⊕	⊕	–	⊕	–	–
benzyl benzoate	⊕	⊕	⊕	⊖	○	⊕	⊕	–	⊕	–	–
i-propyl myristate	⊕	○	○	○	⊕	⊕	–	–	–	–	–
tricresyl phosphate	⊕	○	○	○	⊕	⊕	⊕	–	–	–	–
Ethers and sulphoxides											
diethyl ether	⊕	○	⊖	○	⊕	⊕	⊕	⊕	⊕	○	–
dioxan	⊖	⊖	⊖	⊖	⊕	⊕	⊕	⊕	⊖	○	⊕
tetrahydrofuran	⊖	⊖	⊖	⊖	⊕	⊕	⊕	○	⊖	⊕	⊕
Dimethylsulphoxide	⊖	⊖	⊖	⊖	⊕	⊕	○	–	⊖	–	–

Substances	CA	CM/MV	NC	PC	PE/PET	TE/PTFE	RC	PA	PES	PVDF	GF
Solvents containing nitrogen											
dimethylformamide	⊖	⊖	⊖	⊖	⊕	⊕	○	⊕	–	○	–
dimethylacetamide	⊖	⊖	⊖	○	⊕	⊕	⊕	–	–	–	–
triethanolamine	⊕	○	⊕	○	⊕	⊕	⊕	–	–	–	–
aniline	⊖	○	○	⊖	⊕	⊕	⊕	–	–	–	–
pyridine	⊖	⊖	⊖	⊖	⊕	⊕	⊕	–	–	–	–
Acids											
hydrochloric acid 30%	⊖	⊖	⊖	⊖	⊕	⊕	⊖	⊖	⊖	⊕	⊕
hydrochloric acid 25%	⊖	⊖	○	⊖	⊕	⊕	⊕	–	⊖	–	⊕
nitric acid 65%	⊖	⊖	⊖	○	⊖	⊕	⊖	⊖	⊖	⊕	⊕
nitric acid 1 N	⊕	⊕	○	⊖	⊕	⊕	⊕	–	⊖	–	⊕
sulphuric acid 96%	⊖	⊖	⊖	⊖	⊖	⊕	⊖	–	⊖	–	–
phosphoric acid 80%	⊖	⊖	–	–	⊕	⊕	○	⊖	⊖	⊕	⊕
phosphoric acid 25%	⊕	○	○	○	○	⊕	⊕	–	⊖	–	⊕
formic acid 100%	⊖	⊕	⊖	○	⊕	⊕	○	⊖	⊕	⊕	⊕
formic acid 25%	○	⊖	⊕	○	⊕	⊕	⊕	–	⊕	–	⊕
acetic acid 96%	⊖	⊖	⊖	○	⊕	⊕	⊖	⊖	⊕	⊕	⊕
acetic acid 25%	⊕	⊕	–	○	⊕	⊕	⊕	–	⊕	–	⊕
oxalic acid10% aq.	⊖	⊕	–	–	⊕	⊕	⊕	⊖	⊕	⊕	–
trichloroacetic acid 10%	⊕	⊖	⊕	○	⊕	⊕	⊖	–	⊖	–	–
Bases											
ammonia 25%	○	⊖	○	⊖	⊖	⊕	⊖	⊖	⊕	⊕	⊕
ammonia 1 N	⊕	⊕	⊕	⊖	⊕	⊕	⊕	–	⊕	–	–
sodium hydroxide 1 N	⊖	⊖	⊖	⊖	⊖	⊕	○	⊕	–	○	–
potassium hydroxide 1 N	⊖	⊖	–	⊖	○	⊕	○	⊕	–	○	–
Miscellaneous											
aqueous phenol solution	⊖	⊕	⊖	⊖	⊕	⊕	⊕	–	–	–	–
formalin 30%	○	⊕	⊕	⊕	⊕	⊕	–	–	–	–	–
turpentine oil	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	–	–	–
castor oil	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	–	–	–
cremophor 2%	⊕	⊕	○	○	⊕	⊕	⊕	–	–	–	–
hydrogen peroxide 30%	⊕	⊕	⊕	⊕	⊕	⊕	⊕	–	⊖	–	–
photoresist	⊖	⊖	⊕	⊕	⊕	⊕	⊕	–	–	–	–
nail varnish remover	⊖	⊖	⊕	⊕	⊕	⊕	⊕	–	⊖	–	–

⊕: resistant ○: partly resistant ⊖: not resistant

– : no information

Section III

- **Applications** 47
- **pH - Fix Test strips** 50
- **Test papers** 51
  - pH indicator paper - (non-bleeding) 51
  - PEHANON® 51
  - Universal and special indicator papers 51
  - Special indicator papers 52
  - pH indicator papers 52
  - QUANTOFIX® 53
  - AQUADUR® 54
- **Test strips for semi-quantitative determinations** 56
  - Special test strips and test papers 56
  - Qualitative test papers 56
  - Fluoride test paper 56
  - Indanthrene yellow paper 56
  - Oil test paper 57
  - AQUATEC 57
- **Test kits for water analysis**
  - VISOCOLOR® – alpha 59
  - VISOCOLOR® – ECO 60
  - VISOCOLOR® – HE 61
  - VISOCOLOR® – Program 62

Agriculture and floriculture (soil analysis)

Ammonium	Copper
Calcium	Cyanide
Carbonate hardness	Hardness
Chloride	Iron
Chlorine	Magnesium
	Nitrate
	Nitrite
	pH
	Phosphate
	Potassium

Aquaculture and fish farming

Ammonium	Hardness
Calcium	Iron
Carbonate hardness	Magnesium
Cyanide	Manganese
	Nitrate
	Nitrite
	Oxygen
	pH
	Phosphate
	Sulfide

Boiler feed water

Calcium	Hydrazine
Carbonate hardness	Iron
Chloride	Magnesium
Copper	Oxygen
DEHA	pH
Hardness	Phosphate
	Residual hardness
	Silica
	Sulfate
	Sulfite
	Zinc

Breweries

Alkalinity	Copper
Aluminium	Detergents
Ammonium	Hardness
Calcium	Hydrazine
Carbonate hardness	Iron
Chlorine	Magnesium
Chloride	Manganese
	Nitrate
	Nitrite
	pH
	Phosphate
	Residual hardness
	Sulfate

Cement and concrete production

Ammonium	Carbonate hardness
Calcium	Chloride
	Chromium / Chromate
	Hardness
	Magnesium
	Nitrate
	pH
	Sulfate

Chemical industry

Alkalinity	Hardness
Ammonium	Hydrazine
Calcium	Iron
Carbonate hardness	Magnesium
Chlorine	Manganese
Chloride	Nickel
Chromium / Chromate	Nitrate
Copper	Nitrite
Cyanide	Oxygen
DEHA	pH
Detergents	Phosphate
Fluoride	Potassium
	Residual hardness
	Silica
	Sulfate
	Sulfide
	Sulfite
	Zinc

Rapid Tests from MACHEREY-NAGEL

Applications

Cooling water

- Calcium
- Carbonate hardness
- Chloride
- Chlorine
- Hardness
- Iron
- Magnesium
- Manganese
- Nitrate
- pH
- Phosphate
- Residual hardness
- Sulfate

Drinking water

- Aluminium
- Ammonium
- Calcium
- Carbonate hardness
- Chlorine
- Chloride
- Chromium / Chromate
- Copper
- Cyanide
- Fluoride
- Hardness
- Iron
- Magnesium
- Manganese
- Nickel
- Nitrate
- Nitrite
- pH
- Sulfate

Electroplating industry

- Aluminium
- Ammonium
- Calcium
- Chlorine
- Chloride
- Chromium / Chromate
- Copper
- Cyanide
- Iron
- Nitrate
- Nitrite
- pH
- Phosphate
- Sulfate
- Sulfide
- Sulfite
- Zinc

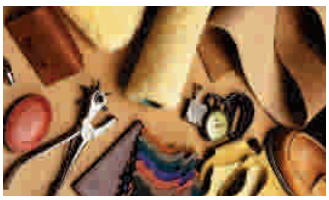
Food and beverage industries

- Aluminium
- Ammonium
- Calcium
- Carbonate hardness
- Chloride
- Chlorine
- Chromium / Chromate
- Copper
- Cyanide
- Fluoride
- Hardness
- Iron
- Magnesium
- Manganese
- Nitrate
- Nitrite
- pH
- Phosphate
- Residual hardness
- Sulfate
- Sulfide
- Sulfite
- Zinc

Industrial waste water

- Aluminium
- Ammonium
- Chloride
- Chlorine
- Chromium / Chromate
- Copper
- Cyanide
- Detergents
- Iron
- Manganese
- Nitrate
- Nitrite
- Oxygen
- pH
- Phosphate
- Sulfate
- Sulfide
- Sulfite
- Zinc

Leather industry



- Ammonium
- Calcium
- Chloride
- Chromium
- Hardness
- Iron
- Magnesium
- Manganese
- Nitrate
- pH
- Phosphate
- Residual hardness
- Sulfate

Applications

Metal processing industry

Aluminium	Detergents
Ammonium	Iron
Chloride	Manganese
Chlorine	Nickel
Chromium / Chromate	Nitrate
Cyanide	Nitrite
Copper	pH
	Phosphate
	Silver
	Sulfate
	Sulfide
	Sulfite
	Zinc

Milk industry

Calcium	Hardness
Carbonate hardness	Iron
Chlorine	Magnesium
Chloride	Manganese
	Nitrate
	pH
	Phosphate
	Residual hardness
	Sulfate

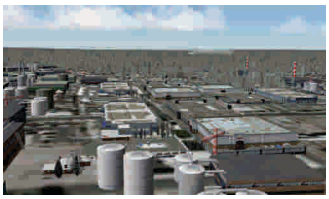
Municipal waste water

Ammonium	COD
BOD_5	Nitrate
	Nitrite
	total Nitrogen
	pH
	Phosphate
	TOC

Paper industry

Calcium	Carbonate hardness
	Chlorine
	Hardness
	Magnesium
	pH
	Residual hardness

Photo industry



Alkalinity	Chromium / Chromate
Calcium	Copper
Carbonate hardness	Cyanide
Chlorine	Detergents
Chloride	Hardness
	Iron
	Magnesium
	Nitrite
	Oxygen
	pH

Pool and spa care

Aluminium	Ammonium
	Bromine
	Carbonate hardness
	Chlorine
	Cyanuric acid
	pH

Surface water and sea water

Aluminium	Iron
Ammonium	Magnesium
Calcium	Manganese
Chloride	Nickel
Chlorine	Nitrate
Cyanide	Nitrite
Detergents?	Oxygen
Hardness	pH
	Phosphate
	Residual hardness
	Sulfate
	Sulfide
	Zinc

Textile industry

Aluminium	Chromium / Chromate
Alkalinity	Copper
Calcium	Hardness
Carbonate hardness	Magnesium
Chlorine?	Nickel
	pH
	Potassium
	Residual hardness
	Sulfide
	Sulfite
	Zinc

Rapid Tests from MACHEREY-NAGEL

pH - Fix test strips

Unmatched pH testing enjoyment

Patented color fixed indicator

The patented pH-Fix technology ensures optimal usability of the test strips. During production, the indicator is fixed to the test paper. The dye does not Wash out so clothes stay clean and samples remain pure.

Fast results

pH-Fix test strips allow fast pH testing directly at the point of interest. The easy Dip & Read procedure provides a reliable result within 10 seconds. Provided with a complete high quality color chart, pH-Fix does not need calibration and is immediately ready for use.

Easy and safe

For careful testing of dangerous, poisonous or aggressive liquids, pH-Fix test strips have the optimal design. The long plastic handle effectively protects the user from contact with the sample.

PEHANON®

Ideal pH test for colored samples

Accurate pH values

PEHANON® is a special pH test strip that unifies the pH indicator and the color chart on one strip. Any sample color has the same effect on both, the reference colors and the reactive pad. This ensures unadulterated and accurate readings in colored solutions.

Safe use

An invisible hydrophobic barrier just above the top color field prevents capillary action of the test solution beyond. The handle remains dry and clean. The user is safely protected from the sample.

Economic test

PEHANON® allows the pH determination without a separate color chart. Workers and machinists can use single strips instead of complete packs, which makes this test ideal for occasions, where many people have to perform the test in different locations.

pH indicator papers

Standard pH testing

pH indicator paper reels general purpose pH determination

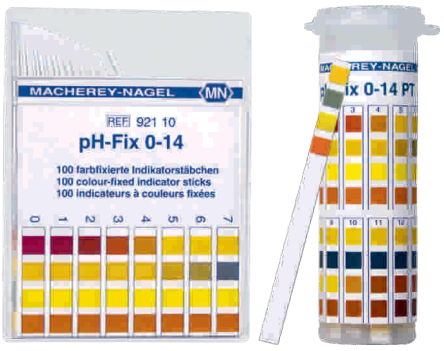
pH indicator papers have been on the market for decades and are the appreciated standard for many applications. For each pH value these papers show a single color which can be matched with the color scale at intervals of 0.2–1 pH unit.

Duotest improved accuracy

These indicator papers show two different colors for each pH value at intervals of 0.3–1 pH unit. This allows more accurate reading and good estimation of intermediate values.

Tritest most precise pH determination

For most precise reading, these papers show three different colors for each full pH unit. This ensures optimal color differences and allows good estimation of intermediate values.



pH-Fix test strips

PEHANON®-
Accurate pH values

Duotest & Tritest
improved & most precise pH determination

pH indicator papers- (non-bleeding)

Ordering information and price list for pH indicator papers

Test	Gradation	Cat No.	Price ₹
Classic flat box with 100 test strips 6 x 85 mm			
pH Fix 0–14	0 · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12 · 13 · 14	921 10	1600
pH Fix 0.0–6.0	0 · 0.5 · 1.0 · 1.5 · 2.0 · 2.5 · 3.0 · 3.5 · 4.0 · 4.5 · 5.0 · 5.5 · 6.0	921 15	1800
pH Fix 2.0–9.0	2.0 · 2.5 · 3.0 · 3.5 · 4.0 · 4.5 · 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	921 18	1910
pH Fix 4.5–0.0Œ[1])	4.5 · 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0 · 9.5 · 10.0	921 20	1750
pH Fix 6.0–10.0	6.0 · 6.4 · 6.7 · 7.0 · 7.3 · 7.6 · 7.9 · 8.2 · 8.4 · 8.6 · 8.8 · 9.1 · 9.5 · 10.0	921 22	1820
pH Fix 7.0–14.0	7.0 · 7.5 · 8.0 · 8.5 · 9.0 · 9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0 · 13.5 14.0	921 25	1830
pH Fix 0.3–2.3	0.3 · 0.7 · 1.0 · 1.3 · 1.6 · 1.9 · 2.3	921 80	1840
pH Fix 1.7–3.8	1.7 · 2.0 · 2.3 · 2.6 · 2.9 · 3.2 · 3.5 · 3.8	921 90	1930
pH Fix 3.1–8.3 Œ[1])	3.1 · 3.5 · 3.9 · 4.3 · 4.7 · 5.1 · 5.5 · 5.9 · 6.3 · 6.7 · 7.1 · 7.5 · 7.9 · 8.3	921 35	1880
pH Fix 3.6–6.1 Œ1) 2)	3.6 · 4.1 · 4.4 · 4.7 · 5.0 · 5.3 · 5.6 · 6.1	921 30	1910
pH Fix 5.1–7.2	5.1 · 5.4 · 5.7 · 6.0 · 6.3 · 6.6 · 6.9 · 7.2	921 40	1790
pH Fix 6.0–7.7	6.0 · 6.4 · 6.7 · 7.0 · 7.3 · 7.7	921 50	1880
pH Fix 7.5–9.5	7.5 · 7.9 · 8.2 · 8.4 · 8.6 · 8.8 · 9.1 · 9.5	921 60	1780
pH Fix 7.9–9.8	7.9 · 8.3 · 8.6 · 8.9 · 9.1 · 9.4 · 9.8	921 70	1840
Plop Top tube with 100 test strips 6 x 85 mm			
pH-Fix 0–14 PT	0 · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12 · 13 · 14	921 11	1710
pH-Fix 3.6–6.1 PT Œ1) 2)	3.6 · 4.1 · 4.4 · 4.7 · 5.0 · 5.3 · 5.6 · 6.1	921 31	1880
pH-Fix 4.5–10.0 PT Œ[1])	4.5 · 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0 · 9.5 · 10.0	921 21	1910

Œ:CE-marked according to 1) the IvD-directive 98/79/EG 2) the directive for medical products 93/42/EWG

PEHANON®

Ordering information and price list for PEHANON®

Test	Gradation	Cat No.	Price ₹
Classic flat box with 100 test strips 6 x 85 mm			
PEHANON® 1–12	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12	904 01	2079
PEHANON® 0–1.8	0 · 0.3 · 0.6 · 0.8 · 1.0 · 1.2 · 1.5 · 1.8	904 11	1880
PEHANON® 1.0–2.8	1.0 · 1.3 · 1.6 · 1.8 · 2.0 · 2.2 · 2.5 ·2.8	904 12	1880
PEHANON® 1.8–3.8	1.8 · 2.1 · 2.4 · 2.7 · 3.0 · 3.2 · 3.5 · 3.8	904 13	1910
PEHANON® 2.8–4.6	2.8 · 3.1 · 3.4 · 3.6 · 3.8 · 4.0 · 4.3 · 4.6	904 14	1910
PEHANON® 3.8–5.5	3.8 · 4.0 · 4.2 · 4.4 · 4.6 · 4.9 · 5.2 · 5.5	904 15	1910
PEHANON® 4.0–9.0	4.0 · 4.5 · 5.0 · 5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	904 24	1910
PEHANON® 5.2–6.8	5.2 · 5.5 · 5.7 · 5.9 · 6.1 · 6.3 · 6.5 · 6.8	904 16	1910
PEHANON® 6.0–8.1	6.0 · 6.3 · 6.6 · 6.9 · 7.2 · 7.5 · 7.8 · 8.1	904 17	1910
PEHANON® 7.2–8.8	7.2 · 7.4 · 7.6 · 7.8 · 8.0 · 8.2 · 8.5 · 8.8	904 19	1910
PEHANON® 8.0–9.7	8.0 · 8.2 · 8.4 · 8.6 · 8.8 · 9.1 · 9.4 · 9.7	904 20	1980
PEHANON® 9.5–12.0	9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0	904 21	1970
PEHANON® 10.5–13.0	10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0	904 22	1970
PEHANON® 12.0–14.0	12.0 · 12.5 · 13.0 · 13.5 · 14.0	904 23	1970

Universal and special indicator papers

Ordering information and price list for Universal indicator papers

Test	Gradation	Presentation	Cat No.	Price ₹
Universal indicator paper 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	reel of 5 m x 7 mm	902 01	1270
Universal indicator paper 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	refill pack of 3 reels	902 02	2032
Universal indicator paper 1–14	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	booklet of 100 strips 10 x 70 mm	902 03	1175
Universal indicator paper 1–14	1 · 2 · 3 · 5 · 6 · 7 · 8 · 9 · 10 · 12 · 14	reel of 5 m x 7 mm	902 04	1270
Universal indicator paper 1–14	1 · 2 · 3 · 5 · 6 · 7 · 8 · 9 · 10 · 12 · 14	refill pack of 3 reels	902 24	2032

Test papers

Special indicator papers

Ordering information and price list for special indicator papers

Test	Gradation	Cat No.	Price ₹
Presentation: Reel of 5 m x 7 mm			
Spe. indicator paper 0.5–5.5	0.5 · 1.0 · 1.5 · 2.0 · 2.5 · 3.0 · 3.5 · 4.0 · 4.5 · 5.0 · 5.5	902 05	1310
Spe. indicator paper <3.8–5.8	<3.8–5.8 <3.8 · 3.8 · 4.1 · 4.3 · 4.5 · 4.7 · 4.9 · 5.2 · 5.5 · 5.8 ·5.8	902 06	1310
Spe. indicator paper 4.0–7.0	4.0 · 4.3 · 4.6 · 4.9 · 5.2 · 5.5 · 5.8 · 6.1 · 6.4 · 6.7 · 7.0	902 07	1280
Spe. indicator paper 5.4–7.0	<5.4 · 5.4 · 5.7 · 6.0 · 6.2 · 6.4 · 6.7 · 7.0 · >7.0	902 08	1310
Spe. indicator paper 5.5–9.0	5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	902 09	1280
Spe. indicator paper 6.4–8.0	<6.4 · 6.4 · 6.6 · 6.8 · 7.0 · 7.2 · 7.4 · 7.6 · 7.8 · 8.0 ·>8.0	902 10	1310
Spe. indicator paper 7.2–9.7	<7.2 · 7.2 · 7.5 · 7.8 · 8.1 · 8.4 · 8.7 · 9.0 · 9.3 · 9.7 >9.7	902 11	1280
Spe. indicator paper 8.0–10.0	8.0 · 8.2 · 8.4 · 8.7 · 9.0 · 9.2 · 9.6 · 10.0	902 12	1310
Spe. indicator paper 9.0–13.0	9.0 · 9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0	902 13	1280
Spe. indicator paper 12.0–14.0	12.0 · 12.5 · 13.0 · 13.5 · 14.0	902 14	1310
Presentation: refill pack of 3 reels			
Spe. indicator paper 0.5–5.5	0.5 · 1.0 · 1.5 · 2.0 · 2.5 · 3.0 · 3.5 · 4.0 · 4.5 · 5.0 · 5.5	902 25	2830
Spe. indicator paper 3.8–5.8	<3.8 · 3.8 · 4.1 · 4.3 · 4.5 · 4.7 · 4.9 · 5.2 · 5.5 · 5.8 · 5.8	902 26	2450
Spe. Indicator paper 4.0–7.0	4.0 · 4.3 · 4.6 · 4.9 · 5.2 · 5.5 · 5.8 · 6.1 · 6.4 · 6.7 · 7.0	902 27	2830
Spe. indicator paper 5.4–7.0	<5.4 · 5.4 · 5.7 · 6.0 · 6.2 · 6.4 · 6.7 · 7.0 · >7.0	902 28	2450
Spe. indicator paper 5.5–9.0	5.5 · 6.0 · 6.5 · 7.0 · 7.5 · 8.0 · 8.5 · 9.0	902 29	2830
Spe. indicator paper 6.4–8.0	<6.4 · 6.4 · 6.6 · 6.8 · 7.0 · 7.2 · 7.4 · 7.6 · 7.8 · 8.0 · 8.0	902 30	2450
Spe. indicator paper 7.2–9.7	<7.2 · 7.2 · 7.5 · 7.8 · 8.1 · 8.4 · 8.7 · 9.0 · 9.3 · 9.7 · 9.7	902 31	2830
Spe. indicator paper 8.0–10.0	8.0 · 8.2 · 8.4 · 8.7 · 9.0 · 9.2 · 9.6 · 10.0	902 32	2450
Spe. indicator paper 9.0–13.0	9.0 · 9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0	902 33	2830
Spe. indicator paper 12.0–14.0	12.0 · 12.5 · 13.0 · 13.5 · 14.0	902 34	2450

pH indicator papers

Duotest and Tritest

Ordering information and price list for Duotest and Tritest indicator papers

Test	Gradation	Presentation	Cat No.	Price ₹
Duotest : Reel of 5 m x 10 mm				
Duotest 1–12	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12		903 01	1590
Duotest 1.0–4.3	1.0 · 1.3 · 1.6 · 1.9 · 2.2 · 2.5 · 2.8 · 3.1 · 3.4 · 3.7 · 4.0 · 4.3	reel of 5 m x 10 mm	903 02	1590
Duotest 3.5–6.8	3.5 · 3.8 · 4.1 · 4.4 · 4.7 · 5.0 · 5.3 · 5.6 · 5.9 · 6.2 · 6.5 · 6.8	reel of 5 m x 10 mm	903 03	1590
Duotest 5.0–8.0	5.0 · 5.3 · 5.6 · 5.9 · 6.2 · 6.5 · 6.8 · 7.1 · 7.4 · 7.7 · 8.0	reel of 5 m x 10 mm	903 04	1590
Duotest 7.0–10.0	7.0 · 7.3 · 7.6 · 7.9 · 8.2 · 8.5 · 8.8 · 9.1 · 9.4 · 9.7 · 10.0	reel of 5 m x 10 mm	903 05	1590
Duotest 9.5–14.0	9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0 · 13.5 · 14.0	reel of 5 m x 10 mm	903 06	1590
Duotest : Refill pack of 3 reels				
Duotest 1–12	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12		903 11	3510
Duotest 1.0–4.3	1.0 · 1.3 · 1.6 · 1.9 · 2.2 · 2.5 · 2.8 · 3.1 · 3.4 · 3.7 · 4.0 · 4.3		903 12	3510
Duotest 3.5–6.8	3.5 · 3.8 · 4.1 · 4.4 · 4.7 · 5.0 · 5.3 · 5.6 · 5.9 · 6.2 · 6.5 · 6.8		903 13	3510
Duotest 5.0–8.0	5.0 · 5.3 · 5.6 · 5.9 · 6.2 · 6.5 · 6.8 · 7.1 · 7.4 · 7.7 · 8.0		903 14	3510
Duotest 7.0–10.0	7.0 · 7.3 · 7.6 · 7.9 · 8.2 · 8.5 · 8.8 · 9.1 · 9.4 · 9.7 · 10.0		903 15	3510
Duotest 9.5–14.0	9.5 · 10.0 · 10.5 · 11.0 · 11.5 · 12.0 · 12.5 · 13.0 · 13.5 · 14.0	refill pack of 3 reels	903 16	3510
pH-Set D 10	Collection of Duotest indicator papers (2 reels of 1–12; 3.5–6.8; 5.0–8.0; 7.0–10.0; 1 reel of 1.0–4.3 and 9.5–14.0)		903 19	15145
Tritest				
Tritest pH 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	reel of 5 m x 10 mm	905 01	1810
Tritest pH 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	refill pack of 3 reels	905 02	3650
Tritest L pH 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	reel of 6 m x 14 mm	905 11	2355
Tritest L pH 1–11	1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 10 · 11	refill pack of 3 reels	905 12	4450

Description of individual parameters and tests

QUANTOFIX® test strips

Dip & Read tests for many substances

Fast results

QUANTOFIX® tests can be used for a large variety of different substances. In most cases, an easy Dip & Read procedure provides reliable results in 10–120 seconds.

Easy to use

All QUANTOFIX® tests are ready to use kits. They are calibrated and contain all necessary equipment and reagents. QUANTOFIX® test strips meet all requirements of a modern rapid test. As “lab in the pocket” they are easy to use for professional analysts as well as chemical laymen.

They are **immediately ready-to-use** and can be utilized right away at the point of interest. To run a test you don't need any equipment or accessories. Thus, you safe time and work more economically.

Precise readings

The color charts are adjusted and checked using certified standard solutions. The user can be sure to receive accurate readings whenever he tests.

QUANTOFIX® Peroxide 25 REF 913 19

This test strip is for the fast and reliable determination of peroxide in solutions. The easy Dip & Read procedure provides a reliable result within 15 seconds. Hydrogen peroxide (H_2O_2) is one of the most powerful oxidizers known. Its disinfectant capabilities are higher than for chlorine (Cl_2) or chlorine dioxide (ClO_2). It is extensively used in the food and dairy industries. Here, peroxide tests are used to ensure that residual peroxide sanitizer has been fully purged from packages prior to the filling. This guarantees that the product has the optimal quality and is free from peroxide. In chemical laboratories QUANTOFIX® Peroxide 100 is used to check organic solvents, because peroxide containing solvents may explode when heated. Moisten the test pad with the solvent and allow it to dry. After drying, add a drop of distilled water to the test pad. If the test pad remains white the solvent is free of peroxides and can safely be used.

Type: test strips
Range : 0 · 0.5 · 2 · 5 · 10 · 25 mg/L H2O2
Sufficient for : 100 tests
Shelf life : at least 2.5 years after production
Color change : white → blue

QUANTOFIX® Peroxide 100 REF 913 12

Similar to QUANTOFIX® Peroxide 25 but different range.

Type: test strips
Range : 0 · 1 · 3 · 10 · 30 · 100 mg/L H2O2
Sufficient for : 100 tests
Shelf life : at least 2.5 years after production
Color change : white → blue

QUANTOFIX® Peroxide 1000 REF 913 33

Similar to QUANTOFIX® Peroxide 25 but different range.

Type : test strips
Range : · 50 · 150 · 300 · 500 · 800 · 1000 mg/L H2O2
Sufficient fo r: 100 tests
Shelf life : at least 2.5 years after production
Color change : white → brown

Ordering information and price List for QUANTOFIX® text strip

Test	Gradation	Cat No.	Price ₹
Presentation: Container with 100 test strips 6 x 95 mm			
QUANTOFIX® Peroxide 25	0 · 0.5 · 2 · 5 · 10 · 25 mg/L H_2O_2	913 19	2280
QUANTOFIX® Peroxide 100 Œ	0 · 1 · 3 · 10 · 30 · 100 mg/L H_2O_2	913 12	2250
QUANTOFIX® Peroxide 1000	0 · 50 · 150 · 300 · 500 · 800 · 1000 mg/L H_2O_2	913 33	3100

Water hardness test kit

AQUADUR® — for the determination of water hardness

AQUADUR® is test strips for the determination of water hardness. Clear color changes from green to red ensure an accurate readout. Individually sealed AQUADUR® test strips can perfectly be combined with promotion activities to inform customers about the necessity of water softener Instructions for use are printed on the seal. Due to the clear design with green / red indication, the result can be read without color chart.

The hardness of water depends on its content of calcium and magnesium salts. The total sum of these salts determines the hardness of water. In the USA, it is expressed in terms of ppm (mg/L) $CaCO_3$.

Water is often simply classified as “soft water“, or “hard water“ etc. The following values generally apply to these terms:

Below 50 ppm $CaCO_3$ – very soft water

50–120 ppm $CaCO_3$ – soft water

120–240 ppm $CaCO_3$ – medium hard water

240–360 ppm $CaCO_3$ – hard water

Above 360 ppm $CaCO_3$ – very hard water

AQUADUR® Sensitive REF 912 10

This test allows the rapid and reliable detection of very low water hardness. The easy Dip & Read procedure provides a reliable result within 20 seconds.

In dialysis centers AQUADUR® Sensitive is used to check feed water. Low levels of water hardness are necessary to ensure optimal function of further water purification such as reversed osmosis.

This test is CE-marked according to the directive for medical products 93/42/EWG for use in dialysis.

Ordering information and price list for AQUADUR® test strip

Test	Color change	Cat No.	Price ₹
Presentation: Container with 100 test strips 6 x 95 mm			
< 54 · > 90 · > 180 · > 270 · > 360 · > 450 ppm $CaCO_3$	green → red	912 01	2400
< 54 · > 72 · > 126 · > 252 · > 378 ppm $CaCO_3$	green → red	912 20	2400
< 54 · > 72 · > 151.2 · > 252 ppm $CaCO_3$	green → red	912 39	1980
Presentation:1000 individually sealed test strips, outer dimensions 22 x 95 mm			
< 54 · > 90 · > 180 · > 270 · > 360 · > 450 ppm $CaCO_3$	green → red	912 23	29000
< 54 · > 72 · > 126 · > 252 · > 378 ppm $CaCO_3$	green → red	912 24	29000
< 54 · > 72 · > 151.2 · > 252 · > 378 ppm $CaCO_3$	green → red	912 40	29000
Presentation: 5000 test strips, without scale			
< 54 · > 90 · > 180 · > 270 · > 360 · > 450 ppm $CaCO_3$	green → red	912 21	54700
< 54 · > 72 · > 126 · > 252 · > 378 ppm $CaCO_3$	green → red	912 22	54700
Presentation: Set of 3 individually sealed test strips, pack of 50 sets			
< 54 · > 90 · > 180 · > 270 · > 360 · > 450 ppm $CaCO_3$	green → red	912 902	9970
AQUADUR® Sensitive- Box of 100 test strips 6 x 95 mm			
0 · 5.4 · 10.8 · 19.8 ppm $CaCO_3$	light beige → blue	912 10	3540
CE-marked according to the directive for medical products 93/42/EWG			

Ordering information and price list for other range of QUANTOFIX® test strip

Test	Gradation	Cat No.	Price ₹
Presentation: Container with 100 test strips 6 x 95 mm			
QUANTOFIX® Aluminum* [1]	0 · 5 · 20 · 50 · 200 · 500 mg/L Al^{3+}	913 07	5140
QUANTOFIX® Ammonium* [1]	0 · 10 · 25 · 50 · 100 · 200 · 400 mg/L NH_4^+	913 15	4120
QUANTOFIX® Arsenic 10* [1]	0 · 0.01 · 0.025 · 0.05 · 0.1 · 0.5 mg/L $As^{3+/5+}$	913 34	7300
QUANTOFIX® Arsenic 50* [1]	0 · 0.05 · 0.1 · 0.5 · 1.0 · 1.7 · 3.0 mg/L $As^{3+/5+}$	913 32	8960
QUANTOFIX® Arsenic Sensitive* [1]	0 · 0.005 · 0.01 · 0.025 · 0.05 · 0.1 · 0.25 · 0.5 mg/L $As^{3+/5+}$	913 45	8950
QUANTOFIX® Ascorbic acid	0 · 50 · 100 · 200 · 300 · 500 · 1000 · 2000 mg/L vitamin C	913 14	2710
QUANTOFIX® Calcium* [1]	0 · 10 · 25 · 50 · 100 mg/L Ca^{2+}	913 24[2]	5320
QUANTOFIX® Carbonate hardness	0 · 3.8 · 7.5 · 12.5 · 18.8 · 25.0 °e	913 23	2810
QUANTOFIX® Chloride	0 · 500 · 1000 · 1500 · 2000 · = 3000 mg/L Cl^-	913 21	2980
QUANTOFIX® Chlorine* [1]	0 · 1 · 3 · 10 · 30 · 100 mg/L Cl_2	913 17	2610
QUANTOFIX® Chlorine Sensitive CE	0 · 0.1 · 0.5 ·1 ·3 ·10 mg/L Cl_2	913 39	2610
QUANTOFIX® Chromate* [1]	0 · 3 · 10 · 30 · 100 mg/L CrO_4^{2-}	913 01	3250
QUANTOFIX® Cobalt	0 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 mg/L Co^{2+}	913 03	2920
QUANTOFIX® Copper	0 · 10 · 30 · 100 · 300 mg/L $Cu^{+/2+}$	913 04	2260
QUANTOFIX® Cyanide* [1]	0 · 1 · 3 · 10 · 30 mg/L CN^-	913 18	4900
QUANTOFIX® EDTA	0 · 100 · 200 · 300 · 400 mg/L EDTA	913 35	3450
QUANTOFIX® Formaldehyde* [1]	0 · 10 · 20 · 40 · 60 · 100 · 200 mg/L HCHO	913 28	4500
QUANTOFIX® Glucose	0 · 50 · 100 · 250 · 500 · 1000 · 2000 mg/L glucose	913 48	3080
QUANTOFIX® Glutaraldehyde	0 · 0.5 · 1 · 1.5 · 2 · 2.5 % glutaraldehyde	913 43	4730
QUANTOFIX® Total iron 100	0 · 2 · 5 · 10 · 25 · 50 · 100 mg/L $Fe^{2+/3+}$	913 44	2970
QUANTOFIX® Total iron 1000	0 · 5 · 20 · 50 · 100 · 250 · 500 · 1000 mg/L $Fe^{2+/3+}$	913 30	2260
QUANTOFIX® LubriCheck	0 · 15 · 50 · 75 · 130 · 200 mmol/L KOH	913 36	4100
QUANTOFIX® Molybdenum* [1]	0 · 5 · 20 · 50 · 100 · 250 mg/L Mo^{6+}	913 25	5700
QUANTOFIX® Nickel	0 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 mg/L Ni^{2+}	913 05	2410
QUANTOFIX® Nitrate/Nitrite	0 · 10 · 25 · 50 · 100 · 250 · 500 mg/L No_3^-	913 13	2510
	0 · 1 · 5 · 10 · 20 · 40 · 80 mg/L NO_2^-		
QUANTOFIX® Nitrite	0 · 1 · 5 · 10 · 20 · 40 · 80 mg/L NO_2^-	913 11	2410
QUANTOFIX® Nitrite 3000	0 · 0.1 · 0.3 · 0.6 · 1 · 2 · 3 g/L NO_2^-	913 22	2520
QUANTOFIX® Nitrite/pH	0 · 1 · 5 · 10 · 20 · 40 · 80 mg/L NO_2^-	913 38	4315
	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		
QUANTOFIX® Peracetic acid 50 CE	0 · 5 · 10 · 20 · 30 · 50 mg/L peracetic acid	913 40	3110
QUANTOFIX® Peracetic acid 500 CE	0 · 50 · 100 · 200 · 300 · 400 · 500 mg/L peracetic acid	913 41	3110
QUANTOFIX® Peracetic acid 2000 CE	0 · 500 · 1000 · 1500 · 2000 mg/L peracetic acid	913 42	3110
QUANTOFIX® Phosphate* [1]	0 · 3 · 10 · 25 · 50 · 100 mg/L PO_4^{3-}	913 20	4210
QUANTOFIX® Potassium [1]	0 · 200 · 400 · 700 · 1000 · 1500 mg/L K^+	913 16	5557
QUANTOFIX® QUAT	0 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 mg/L benzalkonium-chloride	913 37	3335
QUANTOFIX® Sulfate	< 200 · > 400 · > 800 · > 1200 · > 1600 mg/L SO_4^{2-}	913 29	2690
QUANTOFIX® Sulfite	0 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 mg/L SO_3^{2-}	913 06	2340
QUANTOFIX® Tin	0 · 10 · 25 · 50 · 100 · 250 · 500 mg/L Sn^{2+}	913 09	4600
QUANTOFIX® Zinc* [1]	0 · 2 · 5 · 10 · 25 · 50 · 100 mg/L Zn^{2+}	913 10	5210
QUANTOFIX®	total hardness 0 · 6.3 · 12.5 · 18.8 · 25.0 · 31.3 °e	913 26	4980
Multi-stick for aquarium owners	carbonate hardness 0 · 3.8 · 7.5 · 12.5 · 18.8 · 25.0 °e		
	pH 6.4 · 6.8 · 7.2 · 7.6 · 8.0 · 8.4	913 27[3]	2550

Presentation: Container with 100 test strips 6 x 95 mm

[1] The tests are supplied complete with all reagents required for the determination

[2] Presentation: Container with 60 test strips [3] Presentation: Container with 25 test strips

CE: CE-marked according to the directive for medical products 93/42/EWG

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

Test strips for semi-quantitative determinations

Description of individual parameters and tests

Special test strips and test papers

The tests in this special selection are designed to test special analytical questions and provide solutions for specific requirements. Most strips feature high quality color scales for semi quantitative determinations, while some are just quantitative in nature.

Similar to all our other test strips and papers, the tests mentioned above are very easy to use, especially user friendly and they provide results within seconds.

Table of applications and Price list

Determination of	Test paper/ strips	Gradation	Cat No.	Price ₹
Ammonium/Ammonia	Ammonia Test	0 · 0.5 · 1 · 3 · 6 mg/L NH_4^+	907 14	2375
Chlorine	Chlorine Test	10 · 50 · 100 · 200 mg/L Cl_2	907 09	1340
Fluoride ions	Fluoride Test	0 · 2 · 5 · 10 · 20 · 50 · 100 mg/L F^-	907 34	7950
Halide ions	Saltesmo	0 · 0.25 · 0.5 · 1 · 2 · 3 · 4 · 5 g/L NaCl	906 08	9875
Humidity in air (relative)	Moisture indicator*	20 · 30 · 40 · 50 · 60 · 70 · 80 %	908 01	6096
	Moisture indicator*	8 %	908 901	15900
	Moisture indicator	8 %	908 903	16700
	without cobalt chloride			
Ozone content in air	Ozone Test	< 90 · 90–150 · 150–210 · > 210 µg/m^3 O_3	907 36	2240
QUATS	INDIQUAT	on request	909 000–909 002	-
Silver	Ag-Fix (test paper)*	0 · 1 · 2 · 3 · 5 · 7 · 10 g/L Ag^+	907 40	3550
	Ag-Fix (test strips)	0 · 0.5 · 1 · 2 · 3 · 5 · 7 · 10 g/L Ag^+		
		pH 4 · 5 · 6 · 7 · 8	907 41	3450

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

Qualitative test papers :

Test papers allow the qualitative determination of ions and chemical compounds. They are used to detect if compounds tested for are present above the specific detection limit. Some of the papers have specific applications.

Fluoride test paper — REF 907 05

The test paper allows the fast detection of fluoride ions in solutions containing hydrochloride acid. It is suitable for the safe and easy detection of dangerous hydrofluoric acid, which is used for example in computer chip production.

Type: test paper
Limit of sensitivity: 20 mg/L F–
Sufficient for: 200 tests
Color change: pink → yellow-white

Indanthrene yellow paper — REF 907 51

The test paper allows the easy determination of hydrosulfite (sodium dithionite) in alkaline solution. It is used to determine the endpoint in the conversion of vat dyes to the leuco form. Because of the special purpose, indanthrene yellow paper is also called hydrosulfite paper.

Type: test paper
Limit of sensitivity: alkaline sodium dithionite traces
Sufficient for: 200 tests
Color change: yellow → blue

Description of individual parameters and tests

Oil test paper

REF 907 60

This test paper allows the fast and reliable detection of oil contaminations of water and soil. The sensitivity largely depends on the nature of the respective hydrocarbon. For detection of oil in soil, press the paper firmly against the soil to be tested and rinse with clear water. To determine oil in water, move the paper back and forth a few times in the sample. In case of volatile hydrocarbons, the color reaction of the test paper has to be evaluated immediately.

Type: test paper
Limit of sensitivity: see table
Sufficient for: 100 tests
Color change: pale blue → dark blue

Substance	Color change	
	Lower limit mg/L of water	Clearly detectable mg/L of water
Petroleum ether (b. p. 40–80 °C)	250	400
Gasoline (high octane)	10	25
Fuel oil	5	10
Lubricating oil	1	5

AQUATEC

REF 907 42

This test allows the quick and easy measurement of the water amount at the bottom of petrol and fuel oil tanks. In petrol and fuel oil tanks water accumulates over time forming a layer at the bottom. To measure this layer the PE strip is fixed onto a flat steel sheet so that the lower ends coincide.

It is then lowered into the tank with a tin cord until it reaches the bottom. Any water present beneath the fuel will dissolve the blue layer (testing time about 15–20 seconds). The thickness of the water layer corresponds to the colorless part of the strip.

Type: test strips
Limit of sensitivity: depending on the geometry of the tank, about 1–2 mm water layer
Sufficient for: 100 tests
Color change: blue → colorless

Test strips for qualitative determinations

Ordering information and price list for other range of Qualitative test strip

Determination of	Test paper/ Strips	Presentation Box of / Roll of	Cat No.	Price ₹
Alkaline phosphates in milk	Phosphatesmo MI	50 test strips 10 x 95 mm	906 12	3985
Aluminum ions (Al^{3+})	Aluminum test	100 strips 20 x 70 mm	907 21	3450
Ammonia, ammonium ions (NH_3, NH_4^+)	Ammonium test paper	200 strips 20 x 70 mm	907 22	5763
Antimony ions (Sb^{3+})	Antimony test paper	200 strips 20 x 70 mm	907 23	4668
Arsenic, arsine (As, AsH_3)	Arsenic test paper*	200 strips 20 x 70 mm	907 62	4670
	= mercury bromide paper			
Bismuth ions (Bi^{3+})	Bismuth test paper	200 strips 20 x 70 mm	907 33	4690
Blood traces (Peroxidase)	Peroxtesmo KM	25 sheets 15 x 30 mm	906 05	15445
Boric acid, borates (H_3BO_3, BO_3^{3-})	Tumeric paper	200 strips 20 x 70 mm	907 47	2750
Chlorine, free halogens	Chlortesmo Potassium iodide	200 strips 20 x 70 mm	906 03	5850
	starch paper (see below)			
Chromium, chromate (Cr(VI), CrO_4^{2-})	Chromium test paper	200 strips 20 x 70 mm	907 24	3450
Cobalt ions (Co^{2+})	Cobalt test paper	100 strips 20 x 70 mm	907 28	3450
Copper, copper ions (Cu, Cu+, Cu^{2+})	Cuprotesmo	40 sheets 40 x 25 mm	906 01	5850
Copper(II) ions (Cu^{2+})	Copper test paper	strips 20 x 70 mm	907 29	4700
Cyanide, hydrocyanic acid (CN^-, HCN)	Cyantesmo*	reel of 5 m length	906 04	5850
Fluorides, hydrogen fluorides (F^-, H_2F_2)	Fluoride test paper	200 strips 20 x 70 mm	907 50	4750
Halogens, especially free chlorine	Chlortesmo	200 strips 20 x 70 mm	906 03	5850
Hydrogen sulfide (H_2S), sulfide ions (S_2^-)	Lead acetate paper*	roll of 5 m length	907 44	1750
		refill pack of 3 rolls	907 45	1720
		booklet with 100 strips 10 x 75 mm	907 46	810
	Sulfide test paper	roll of 5 m length	907 61	1525
Iron(II) ions (Fe^{2+})	Dipyridyl paper	200 strips 20 x 70 mm	907 25	4670
Iron ions (Fe^{2+}, Fe^{3+})	Iron test paper	100 strips 20 x 70 mm	907 26	3510
Lactoperoxidase in milk	Peroxtesmo MI	100 strips 15 x 15 mm	907 27	4670
Lead, lead ions (Pb, Pb^{2+})	Plumbtesmo	40 sheets 40 x 25 mm	906 02	6960
Mastitis	Udder test paper	PE bag with 20 sheets	907 48	685
Nickel(II) ions (Ni^{2+})	Nickel test paper	200 strips 20 x 70 mm	907 30	4670
Nitrate and nitrite (NO_3^-, NO_2^-)	Nitratesmo	reel of 5 m length	906 11	5850
Nitrite ions (NO_2^-), nitrous acid (HNO_2),	Potassium iodide starch	reel of 5 m length	907 54	1640
ozone (O_3)	paper MN 816 N	refill pack of 3 rolls	907 55	1840
	(normal sensitivity)	booklet of 100 strips 10 x 75 mm	907 56	985
	Potassium iodide starch	200 strips 20 x 70 mm	907 58	2750
	paper MN 616 T			
	(for spot tests)			
Oil in water and soil	Oil test paper	100 strips 20 x 70 mm	907 60	4510
Peroxidase in foodstuffs	Peroxtesmo KO	100 sheets 15 x 15 mm	906 06	10605
Peroxidase in milk	Peroxtesmo MI	100 sheets 15 x 15 mm	906 27	3175
Potassium ions (K^+)	Potassium test paper	200 sheets 20 x 70 mm	907 27	5765
Protein residues	INDIPRO*	60 test sticks 10 x 95 mm	907 65	12685
		and reagents		
Reducing agents, SO_2, sulfite ions	Potassium iodate	starch paper reel of 5 m length	907 53	1640
Silver ions (Ag^+)	Silver test paper	200 strips 20 x 70 mm	907 32	4670
Sulphur dioxide (SO_2), sulfite ions	Sulfite test paper	100 strips 20 x 70 mm	907 63	4670
Sperm, acid phosphatase	Phosphatesmo KM	25 sheets 15 x 30 mm	906 07	4670
Vat dyes, end-point of conversion	Indanthrene yellow paper	200 strips 20 x 70 mm	907 51	2670
Water on the bottom of fuel tanks	AQUATEC test sticks	100 strips 10 x 200 mm	907 42	4670
Water in org. solutions	Watesmo	reel of 5 m length	906 09	4750
Water distribution in butter	Wator	50 sheets 78 x 40 mm	906 10	5390
Zirconium ions (Zr^{4+})	Zirconium test paper	100 strips 20 x 70 mm	907 21	3450

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

VISOCOLOR® alpha

VISOCOLOR® alpha tests use colorimetric, as well as titrimetric procedures. Use of **multicomponent reagents** results in a very convenient, rapid and safe handling, because often only one reagent is needed for each test. The reagent bottles are packed in practical blister packs.

The cardboard back is used for opening and closing the package, and also provides all information required for the test: instructions for use in 6 languages with pictograms, as well as a color comparison chart for colorimetric evaluations. The blister packs of the VISOCOLOR® alpha test kits have a punched hole for convenient storage or display in showrooms or at sales counter

Colorimetric tests

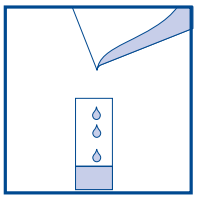
Principle:

Colorimetry with color comparison card

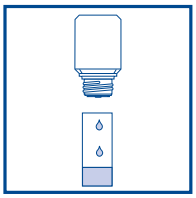
- Visual evaluation
- Environment-friendly
- Cost-efficient
- Convenient handling, as easy as test strips
- Accurate results
- Handy packages
- With pictogram instructions
- Reagent bottles with clear dosing instructions

Test kit consists of plastic pack with:

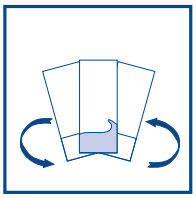
- Sample tube with 5 mL ring mark
- Color coded bottles with liquid or powder reagents
- Measuring spoon for accurate dosage of solid reagents
- Color scale with at least 5 gradations



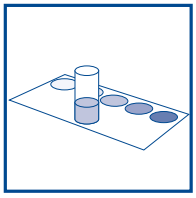
Fill the sample



Add reagent



Mix



Analyze

Titration test kits

Principle:

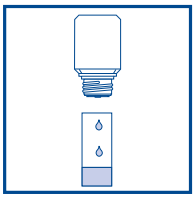
Titration with drop counting

- Visual evaluation
- Environment-friendly
- Cost-efficient
- Convenient handling, as easy as test strips
- Accurate results
- Indicator and titration solution in one dropping bottle
- Handy packages
- With pictogram instructions
- Reagent bottles with clear dosing instructions

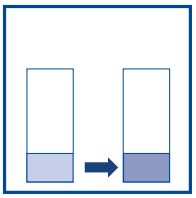
Test kit consists of plastic pack with:

- Sample tube with 5 mL ring mark
- One dropping bottle with mixture of indicator and titration solution

Fill the sample



Add reagent



Color change

Count the drops: 1 drop = a measuring unit

Test kits for water analysis

VISOCOLOR® ECO

VISOCOLOR® ECO presents a product group of colorimetric and Titrimetric test kits which avoids hazardous substances wherever possible. With VISOCOLOR® ECO even water constituents with low limiting values can be determined with sufficient accuracy. All VISOCOLOR® ECO test kits are packed in an environment-friendly box and contain easy to understand instructions in 6 languages.

Colorimetric tests

Principle:

Colorimetry with color comparison card

- Visual and photometric evaluation (PF-12)
- Environment-friendly
- Economic
- Convenient handling
- Higher accuracy and sensitivity
- With pictogram instructions
- Reagent bottles with clear dosing instructions
- Compensation of turbidity and colors
- Refill packs available

Test kit consists of cardboard box with:

- 2 measuring tubes 20 mm diameter with screw caps
- Holder for the measuring tubes
- Color coded bottles with liquid or powder reagents
- Graduated plastic syringe 5 mL for convenient sample dosage
- Measuring spoon for accurate dosage of solid reagents
- Color comparison card with at least 5 gradations

Titration test kits

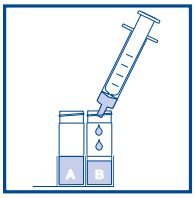
Principle:

Titration with drop counting

- Visual evaluation
- Environment-friendly
- Econimic
- Convenient handling
- Higher accuracy and sensitivity
- Clearer color change due to separated dropping reagents
- Reagent bottles with clear dosing instructions

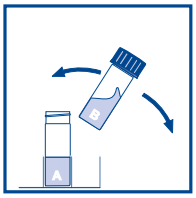
Test kit consists of cardboard box with:

- Sample tube with 5 mL ring mark
- Graduated plastic syringe 5 mL for convenient sample dosage
- Dropping bottle(s) with indicator solution
- Dropping bottle(s) with titration solution

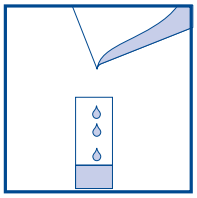


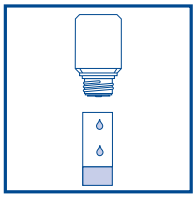
Fill the sample

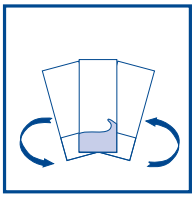
Add reagent



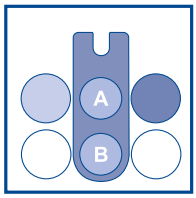
Mix


Fill the sample

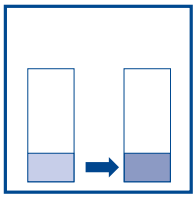

Add indicator


Titration solution


Wait



Analyze


Color change

VISOCOLOR® HE

VISOCOLOR® HE test kits are highly sensitive colorimetric test kits. In comparison with conventional VISOCOLOR® kits, their sensitivity is enhanced by increasing the length of the test tube and the use of highly sensitive reagents. This technique allows a 10-fold to 100-fold increase in sensitivity. Each VISOCOLOR® HE test kit is packed in a robust plastic box which contains the comparator block with color comparison disk and all required reagents. The VISOCOLOR® titration test kits are based on principles of volumetric analysis. On the gradated syringe the results can be read off in mg/L or in alternative dimensions.

Colorimetric tests

Principle:

High sensitivity Colorimetry with comparator block and color comparison disc

- Visual evaluation
- Environment-friendly
- Convenient handling
- Highest accuracy due to extremely narrow gradation
- Highest sensitivity down to 0.002 mg/L due to longer measuring tubes
- Reagent bottles with clear dosing instructions
- Compensation of turbidity and colors
- Refill packs available

Test kit consists of cardboard box with:

- 2 measuring tubes 20 mm diameter with screw caps
- Comparator block with color comparison disk
- Color coded bottles with liquid or powder reagents
- Measuring spoon for accurate dosage of solid reagents
- Beaker for convenient sample dosage

Titration test kits

Principle:

High sensitive volumetric analysis with graduated syringe

- Visual evaluation
- Convenient handling
- Highest accuracy due to narrowly graduated syringe
- Reagent bottles with clear dosing instructions
- Clearer color change due to separated dropping reagents
- Refill packs available

Test kit consists of cardboard box with:

- Sample tube with 5 mL ring mark
- Graduated syringe for precise reagent dosage
- Bottle(s) with indicator solution
- Bottle(s) with titration solution

Test kits for water analysis

VISOCOLOR® program

VISOCOLOR® tests kits are complete plastic boxes with all reagents and accessories for a test. Refill packs are for the replacement of used reagents in a test kit or reagent case. They don't come with a color chart or accessories.

Ordering information and price list for VISOCOLOR® tests kits.

Test	Range	Type	No. of tests	Ref. test kit	Price ₹	Ref. refill pack	Price ₹
VISOCOLOR KITS TITRATION							
Acidity AC 7 (base capacity)	0.2–7.0 mmol/L H^{+} 1)	HE	200	915 006	5840	915 206	3890
Alkalinity AL 7*	0.2–7.0 mmol/L OH^{-} 1)	HE	200	915 007	6050	915 207	3890
Calcium CA 20*	0.6–25.0 °e /	HE	200	915 010	9210	915 210	3890
	0.1–3.6 mmol/L Ca^{2+} 1)						
Carbonate hardness	0.6–25.0 °e /	HE	200	915 003	5840	915 203	3890
C 20(p-/m-Wert)	0.2–7.2 mmol/L H^{+} 1)						
Chloride CL 500*	5–500 mg/L Cl^{-} 1)	HE	300	915 004	7940	915 204	5525
Oxygen SA 10*	0.2–10 mg/L O_2 1)	HE	100	915 009	11097	915 209	8465
Sulfite SU 100*	2–100 mg/L SO_3^{2-} 1)	HE	100	915 008	8560	915 208	6400
Total Hardness H 20F	0.6–25.0 °e /	HE	200	915 005	5830	915 205	3890
	0.1–3.6 mmol/L Ca^{2+} 1)						
Total Hardness H 2*	0.05–2.00 °d /	HE	200	915 002	5830	915 202	3890
	0.01–0.36 mmol/L Ca^{2+} 1)						
VISOCOLOR KITS ALPHA							
Ammonium	0.2–3 mg/L NH_4^{+}	alpha	50	935 012	4540	—	—
Carbonate hardness	1 drop 1.25 °e ≙ 17.8 mg/L $CaCO_3$	alpha	100	935 016	2370	—	—
Chlorine	free 0.25–2.0 mg/L Cl_2	alpha	150	935 019	2575	—	—
Total Hardness*	1 drop 1.25 °e ≙ 17.8 mg/L $CaCO_3$	alpha	100	935 042	2620	—	—
Residual Hardness *	0.04–0.30 °d	alpha	200	935 080	4720	—	—
Nitrate*	2–50 mg/L NO_3^{-}	alpha	100	935 065	20500	—	—
Nitrite*	0.05–1.0 mg/L NO_2^{-}	alpha	200	935 066	9550	—	—
pH 5–9*	pH 5.0–9.0	alpha	200	935 075	3370	—	—
Phosphate*	2–20 mg/L PO_4^{3-}	alpha	70	935 079	4112	—	—
VISOCOLOR KITS ECO							
Aluminum	0.10–0.50 mg/L Al^{3+}	ECO	50	931 006	9530	931 206	12410
Ammonium 15*	0.5–15 mg/L NH_4^{+}	ECO	50	931 010	6050	931 210	4335
Ammonium 3*	0.2–3 mg/L NH_4^{+}	ECO	50	931 008	5100	931 208	3430
Chloride*	1–60 mg/L Cl^{-}	ECO	90	931 018	6605	931 218	4480
Carbonate hardness	1 drop 1.25 °e ≙ 17.8 mg/L $CaCO_3$	ECO	100	935 014	5225	—	—
free Chlorine 2	0.1–2.0 mg/L Cl_2	ECO	150	931 016	3650	931 216	3875
Chlorine 6 free + total 2)	0.05–6.00 mg/L Cl_2	ECO	200	—	—	931 217	4017
free Chlorine 6 2)	0.05–6.00 mg/L Cl_2	ECO	400	—	—	931 219	5500
Chlorine dioxide* **NEW!**	< 0.2–3.8 mg/L ClO_2	ECO	150	931 021	8510	931 221	5740
Chlorine 2, free + total	0.1–2.0 mg/L Cl_2	ECO	150	931 015	5625	931 215	3350
Chromium(VI)*	0.02–0.50 mg/L	ECO	140	931 020	12100	931 220	4745
Calcium* 1	1 drop 5 ≙ mg/L Ca^{2+}	ECO	100	931 012	4050	—	—
Copper	0.1–1.5 mg/L Cu^{2+}	ECO	100	931 037	11200	931 237	3575
Cyanide*	0.01–0.20 mg/L CN^{-}	ECO	100	931 022	7150	931 222	5510
Cyanuric acid	10–100 mg/L Cya	ECO	100	931 023	4330	931 223	5175
DEHA (diethyl hydroxylamine)	0.01–0.30 mg/L DEHA	ECO	125	931 024	10725	931 224	6525
Fluoride 3)	0.1–2.0 mg/L F^{-}	ECO	150	—	16500	931 227	4100
Hydrazine*	0.05–0.40 mg/L N_2H_4	ECO	130	931 030	11110	931 230	7700
Iron 1* **NEW!**	0.04–1.0 mg/L Fe	ECO	200	931 025	11200	931 225	5780
Iron 2	2 0.04–1.0 mg/L Fe	ECO	100	931 026	11110	931 226	4400

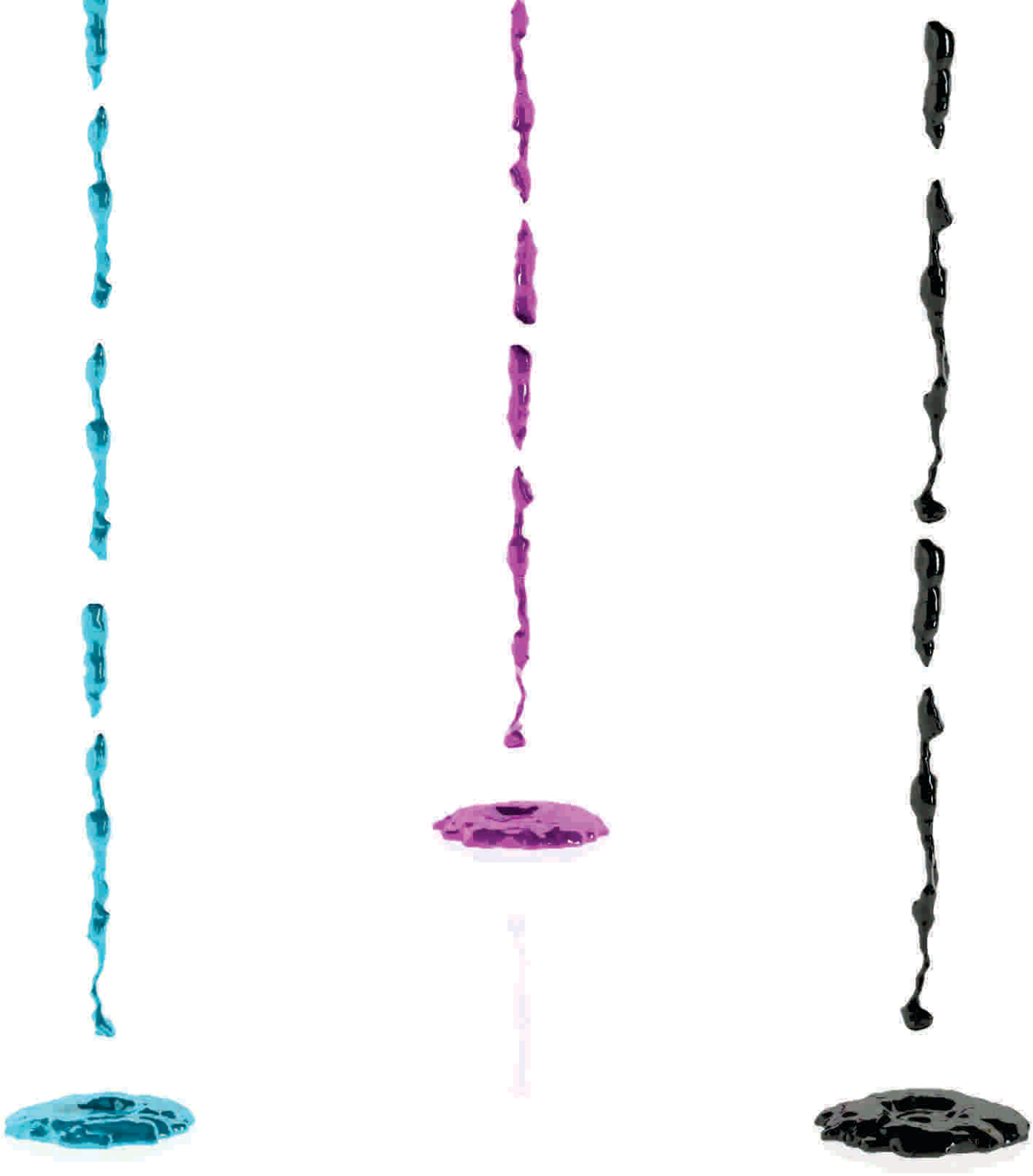
Ordering information and price list for VISOCOLOR® tests kits.

Test	Range	Type	No. of tests	Ref. test kit	Price ₹	Ref. refill pack	Price ₹
VISOCOLOR KITS ECO							
Manganese*	0.1–1.5 mg/L Mn	ECO	70	931 038	10150	931 238	5035
Nickel*	0.1–1.5 mg/L Ni^{2+}	ECO	150	931 040	10700	931 240	5845
Nitrate*	1–120 mg/L NO_3^-	ECO	110	931 041	4400	931 241	2650
Nitrite	0.02–0.5 mg/L NO_2^-	ECO	120	931 044	6850	931 244	3240
Oxygen*	1–10 mg/L O_2	ECO	50	931 088	6960	931 288	5100
Phosphate*	0.2–5 mg/L P	ECO	80	931 084	8800	931 284	3150
pH 4.0–9.0	pH 4.0–9.0	ECO	450	931 066	5650	931 266	2620
pH 6.0–8.2 [2]	pH 6.0–8.2	ECO	150	—	—	931 270	3300
Potassium*	2–15 mg/L K^+	ECO	60	931 032	12764	931 232	8910
Sulfate*	25–200 mg/L SO_4^{2-}	ECO	100	931 092	17050	931 292	4225
Sulfide*	0.1–0.8 mg/L S^{2-}	ECO	90	931 094	10100	931 294	4725
Sulfite	1 drop ≙ 1 mg/L SO_3^{2-}	ECO	60	931 095	5625	—	—
Swimming pool	0.1–2.0 mg/L Cl_2	ECO	150	931 090	6800	931 290	4207
(Chlorine + pH)	pH 6.9–8.2		150				
Silica / silicon	0.2–3.0 mg/L SiO_2	ECO	80	931 033	7525	931 233	4610
Total Hardness*	1 drop ≙ 1.25 °e ≙ 17.8 mg/L	ECO	110	931 029	5225	—	—
Zinc	0.5–3 mg/L Zn^{2+}	ECO	120	931 098	9725	931 298	4480
VISOCOLOR KITS HE							
Ammonium*	0.02–0.50 mg/L NH_4^+	HE	110	920 006	14370	920 106	7540
Chlorine	0.02–0.60 mg/L Cl_2	HE	160	920 015	12035	920 115	7540
Copper	0.04–0.50 mg/L Cu^{2+}	HE	150	920 050	14500	920 150	7540
Cyanide*	0.002–0.04 mg/L CN–	HE	55	920 028	11500	920 128	7430
Iron	0.01–0.20 mg/L Fe	HE	300	920 040	11250	920 140	7540
Manganese*	0.03–0.50 mg/L Mn	HE	100	920 055	10500	920 155	7430
Nitrite	0.005–0.10 mg/L NO^{2-}	HE	150	920 063	15300	920 163	7430
Phosphate*	0.05–1.0 mg/L P	HE	300	920 082	12035	920 182	7545
Phosphate*(DEV) [4]	0.01–0.25 mg/L P	HE	100	920 080	11830	920 180	7430
pH 4.0–10.0	pH 4.0–10.0	HE	500	920 074	8990	920 174	7430
Silica* / silicon	0.01–0.30 mg/L Si	HE	120	920 087	12035	920 187	7545

[1] For titration test kits the range can be increased with additional reagent syringe.
[2] only for the photometric determination with PF-11, PF-12 and VISOCOLOR® photino
[3] only for the photometric determination with PF-11 and PF-12
[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.

Notes


Quantofix
Peressig-säure 50
Quantofix
Gesamteisen 100
Quantofix
Quantofix
Nitrat
Nitrit
10–500 mg/L NO3-
1–80 mg/L NO2-
Halbquantitative Teststäbchen
0
1 mg/L
5
10
20
40
80
MN
www.mn-net.com
Quantofix
Quantofix
Ascorbin-säure



For General Macherey-Nagel Products please contact

www.mnfilter.com