I.C.T, S.L.
INSTRUMENTACIÓN CIENTÍFICO TÉCNICA

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filtration

CHM® Ashless **Filter papers for qualitative analysis**

These filter papers are use for qualitative analysis. Qualitative filters are made of refined pulp and linters with an alpha-cellulose content of virtually 100%, which gives them a number of diverse filtration properties. The ash content of this filter paper is not reduced by post-treatment. Qualitative filter papers are available as sheets, discs and folded filters.

F1001 GRADE - Medium Filtration

The most widely used filter paper in the CHM range. Medium retention and flow rate. This grade covers a wide range of laboratory applications and is frequently used for clarifying liquids. Traditionally the grade is used in qualitative analytical separations for routine laboratory work, rapid filtration of fine precipitates such as lead sulphate, calcium oxalate (hot) and calcium carbonate. In agriculture, it is used for soil analysis and seed testing procedures. In the food industry, Grade F1001 is used for numerous routine techniques to separate solid foodstuffs from associated liquid or extracting liquid and is widely used in education for teaching simple qualitative analytical separations. In air pollution monitoring, using circles or rolls, atmospheric dust is collected from an airflow and the stain-intensity measured photometrically. For gas detection, the paper is impregnated with a chromogenic reagent and colour formation quantified by optical reflectance. F1001 circle sizes available from 25 to 650mm diameter. Sheets and strips also available.

F1002 GRADE - Medium Slow Filtration

Slightly more retentive than No. F1001 and therefore with a moderate to slow filtration speed. More retentive and absorbent than No. F1001. In addition to general filtration this grade F1002 is used, for example, monitoring specific contaminants in the atmosphere, filtration of fine precipitates, soil testing, often used as folded filter in an analytical funnel.

Technical Specifications

GRADE	Properties	Weight g/m²	Thickness µm	Retention range µm	Ash content %
F1001	Medium	85	190	10 - 13	<0.06
F1002	Medium-Slow	85	180	7 - 9	<0.06
F1003	Medium-Slow/Thick	200	320	5 - 7	<0.06
F1004	Very fast	85	210	20-25	<0.06
F1005	Very Slow	85	170	3 - 5	<0.06
F1006	Slow	80	150	2 - 4	<0.06

Order Information

GRADE *Dia. (mm)*	F1001	F1002	F1003	F1004	F1005	F1006
		Standard Grades Circles (100/box)				
42,5	F1001-042	F1002-042	F1003-042	F1004-042	F1005-042	F1006-042
47	F1001-047	F1002-047	F1003-047	F1004-047	F1005-047	F1006-047
55	F1001-055	F1002-055	F1003-055	F1004-055	F1005-055	F1006-055
70	F1001-070	F1002-070	F1003-070	F1004-070	F1005-070	F1006-070
90	F1001-090	F1002-090	F1003-090	F1004-090	F1005-090	F1006-090
110	F1001-110	F1002-110	F1003-110	F1004-110	F1005-110	F1006-110
125	F1001-125	F1002-125	F1003-125	F1004-125	F1005-125	F1006-125
150	F1001-150	F1002-150	F1003-150	F1004-150	F1005-150	F1006-150
185	F1001-185	F1002-185	F1003-185	F1004-185	F1005-185	F1006-185
240	F1001-240	F1002-240	F1003-240	F1004-240	F1005-240	F1006-240
320	F1001-320	F1002-320	F1003-320	F1004-320	F1005-320	F1006-320
GRADE *Size (mm)*	F1001	F1002	F1003	F1004	F1005	F1006
		Standard Grades Sheets (100/pack)				
460x570	F1001-460570	F1002-460570	F1003-460570	F1004-460570	F1005-460570	F1006-460570

You have to add an F at the end of the reference for Folded Circles Filter (e.g. if you need: Grade F1001, diameter 150mm, folded format, the ref is F1001-150F). Without the F the format is flat circle.

Other sizes and packagings are available under request.

F1003 GRADE - Medium Slow Filtration (Thick)

Medium to low rate of filtration with double the thickness comparing with CHM Grade F1001. Fine particle retention and excellent loading capacity. The extra thickness gives increased wet strength and allows a higher solute loading. Preferably used for liquids hard to clarify, essences, oils, tinctures, particularly useful for use in Buechner-funnels.

F1004 GRADE - Fast Filtration

Very high rate of filtration with excellent retention of coarse precipitates such as metal hydroxides and sulphides, or gelatinous substances. Preferably used for as a rapid filter for various organic metal precipitates, routine cleanup of biological fluids, food industry analysis, air pollution monitoring (high rates and the fine particles collection is not critical).

F1005 GRADE - Slow filtration

Lowest rate of filtration in the CHM qualitative range and maximum degree of fine particle filtration. Most efficient filtration of smallest particles. Preferably used as clarifying filter for cloudy suspensions and for water and soil analysis. Particularly in diffucult filtration conditions and extra fine-grained precipitates, barium sulphate, cuprous oxide, often specified for clarification of wine.

F1006 GRADE - Slow Filtration.

Similar particle retention as Grade F1005 with higher filtration speed. Often used for boiler water analysis.

filtration

CHM® General Purpose **Filter papers for qualitative analysis**

These general purpose filters have a high Wet Strengthened. They are made of high-purity cotton linters and other vegetable fibres. These filter papers have fast or very fast filtration rates, and are particularly useful in filtering coarse precipitates or relatively straightforward substances. These filters are not recommended for Kjeldahl.

F1091 GRADE - Very fast filtration

Creped surface. Thick Creped filter paper with medium flow rate. For general laboratory use in less-critical analyses. Used around the world in laboratories to assay sugar cane or beet. The fruit is mashed and further analyzed according to the aluminium sulfur method.

F1093 GRADE - Fast filtration

Smooth Grade F1093 is a General Purpose filter paper for qualitative analysis. This wet strengthened paper is used for general filtration and sample preparation in the food sector, sugar processing plants, hospitals, educational and research centres, colleges, universities and labs (with a very high usage and less critical analysis), etc.

F1113 GRADE - ExtraFast filtration. Thick

High particle retention and extremely high loading capacity. Preferably used for filtration of gelatine, resins solutions and other viscous liquids, such as syrups, oils, essences and fats. The folded format enables greater volumes to be dealt with at atmospheric pressures.

Technical Specifications

GRADE	Properties	Weight g/m²	Thickness µm	Retention range µm	Ash content %
F1091	Very Fast. Crepped. Thick	64	165	34-42	n/a
F1093	Very Fast.	80	180	35-40	n/a
F1113	Extra-Fast. Thick	160	470	60-65	n/a

Order Information

GRADE *Dia. (mm)*	F1091	F1093 *Standard Grades Circles (100/box)*	F1113
42,5	F1091-042	----	----
47	F1091-047	----	----
50	F1091-050	----	----
55	F1091-055	F1093-055	F1113-055
70	F1091-070	F1093-070	F1113-070
90	F1091-090	F1093-090	F1113-090
110	F1091-110	F1093-110	F1113-110
125	F1091-125	F1093-125	F1113-125
150	F1091-150	F1093-150	F1113-150
185	F1091-185	F1093-185	F1113-185
200	F1091-200	F1093-200	F1113-200
240	F1091-240	F1093-240	F1113-240
320	F1091-320	F1093-320	F1113-320
400	F1091-400	F1093-400	F1113-400
500	F1091-500	F1093-500	F1113-500
650	F1091-650	F1093-650	F1113-650

GRADE *Size (mm)*	F1091	F1093 *Standard Grades Sheets (100/box)*	F1113
460 x 570	F1091-460570	F1093-460570	F1113-460570

Other sizes and packagings are available under request.

filtration

CHM® Ashless **Filter papers for quantitative analysis**

These CHM filter papers are used for quantitative analyses and designed for preparation of samples and gravimetric analysis. They are made of refined pulp and linters with virtually 100% of alpha-cellulose content. These filter papers are guaranteed free of possible residual acids used in some production methods. Another main feature is the extremely low percentage of ash content (maximum ash content of 0.007%). Chemiton offers you two groups of ashless filter papers for quantitative analyses. They are suitable for Buechner funnels and for filtration under pressure.

F2040 GRADE – Medium Slow filtration

The classic general purpose ashless filter paper with a medium-to-slow filtering rate. Suitable for typical applications include gravimetric analysis for numerous components and for pre-filtrations of all kinds. Preferably used for as a primary filter for separating solid matter from aqueous extracts, various tests for fat and oil in water, in general soil analysis, quantitative determination of sediments in milk, as an analytical grade clean-up filter for solutions prior to AA spectro- photometry. Suitable for finer precipitates, such as hot barium sulphate.

F2041 GRADE – Fast filtration

Fast ashless filter paper in the CHM quantitative range. It is particularly suitable for analytical procedures and tests involving large particles or gelatinous precipitates (e.g metal hydroxides and sulphides). Also used in metal (Pb) tests in water testing anaysis, quantitative air pollution analysis, food industry, paper industry, etc.

Order Information

GRADE *Dia. (mm)*	F2040	F2041	F2042	F2043	F2044	F2045
			Ashless Grades Circles (100/box)			
12,5	----	----	----	F2043-012 (*)	----	----
47	F2040-047	F2041-047	F2042-047	F2043-047	F2044-047	F2045-047
55	F2040-055	F2041-055	F2042-055	F2043-055	F2044-055	F2045-055
70	F2040-070	F2041-070	F2042-070	F2043-070	F2044-070	F2045-070
90	F2040-090	F2041-090	F2042-090	F2043-090	F2044-090	F2045-090
110	F2040-110	F2041-110	F2042-110	F2043-110	F2044-110	F2045-110
125	F2040-125	F2041-125	F2042-125	F2043-125	F2044-125	F2045-125
150	F2040-150	F2041-150	F2042-150	F2043-150	F2044-150	F2045-150
185	F2040-185	F2041-185	F2042-185	F2043-185	F2044-185	F2045-185
240	F2040-240	F2041-240	F2042-240	F2043-240	F2044-240	F2045-240
Size (mm)			*Ashless Grades Sheets (100/box)*			
460 x 570	F2040-460570	F2041-460570	F2042-460570	F2043-460570	F2044-460570	F2045-460570

** Packs of 1000 circles*

Technical Specifications

GRADE	Properties	Weight g/m²	Thickness µm	Retention range µm	Ash content %
F2040	Medium-Slow	80	170	7 - 9	<0.007
F2041	Fast	80	190	20 - 25	<0.007
F2042	Very Slow	100	160	2 - 3	<0.007
F2043	Medium	80	180	14 - 17	<0.007
F2044	Slow	80	160	2 - 4	<0.007
F2045	Very fast	80	210	25 - 30	<0.01

F2042 GRADE – Very Slow filtration

An ashless world standard filter for critical gravimetric analysis. With a slow filtering rate and fine particle retention. Typical analytical precipitates such as cold barium sulphate, lead sulphate, zinc and nickel sulphides, etc. Using the methods of gravimetry, photometry, colorimetry and precipitation in drinking and waste water treatments it is suitable for testing for chemical elements and for some radioactive substances.

F2043 GRADE - Medium Fast filtration

Ashless filter with medium filtration speed and good retention (between GRADE F2040 and GRADE F2041) of medium and thick particles. Suitable for Gravimetric measurements of gypsum/lime suspensions in power plants. F2043 GRADE is particularly applied in metallurgical industry laboratories for metal tests. Typical applications include foodstuffs analysis; soil analysis; particle collection in air pollution monitoring, COD and TOC determination, inorganic analysis in the construction, mining and steel industries, for the Blaine test in the cement industry for ascertaining how fine the cement is (standards UNE 80-112-91 and EN 196-6), and for carrying out other chemical analyses on cement.

F2044 GRADE – Slow filtration

Thin version of No. F2042 but with higher flow rate (twice as fast as No. F2042). Very fine particles but with lower ash weight per sample.

F2045 GRADE – Fast filtration

Filter paper of very high rate of filtration, wide-pored, soft, spongy structure, extremely low-ash content. For applications like: Food industry: determination of ash contents in foodstuffs, PCB determination in foodstuffs; Beverage industry: Processing (ashing) fruit juice samples for photometric determinations (e.g. phosphate); Environmental analysis: Determination of filterable substances and the residue on ignition (dry weight) according to the German Standard Methods for the examination of water, waste water and sludge (DIN 38 409 part 2)

filtration

CHM® Ashless Hardened **Filter papers for quantitative analysis**

Hardened Ashless Filter papers are acid hardened which reduces the ash content to an extremely low level. This filters are produced by a complex, elaborate washing process under stringently controlled conditions. Firstly, acid washing is arranged. Then comes a series of washes in demineralised water, which increase the strength of the paper, thus making them particularly suitable for Buechner filter funnels and for a wide range of critical analytical filtration operations. Through this process, a maximum ash content of 0.007% is attained, which means that no contaminants are introduced when filtering, and also that full compliance with international standards on this subject is achieved.

Technical Specifications

GRADE	Properties	Weight g/m²	Thickness µm	Retention range µm	Ash content %
F2140	Medium	80	160	7 - 12	0,006
F2141	Very fast	80	170	20 - 25	0,006
F2142	Slow	80	150	2 - 4	0,006

F2140 GRADE – Medium Fast Filtration

Hardened ashless filter paper with medium retention and flow rate. Extremely strong and pure. With a hard surface is recommended for filtering medium-sized precipitates such as most metal sulphides. High chemical resistance. Used in the gravimetric analysis of metals in acid and slightly alkalinized solutions, pressure filtration

F2141 GRADE - Fast Filtration

Hardened ashless filter paper with fast flow rate. Preferably used in filtration of coarse-flocculent and bulky precipitates (as aluminium, chromium or hydroxides of iron, bismuth, cobalt, sulphides of copper, various organic metal precipitates, etc.) and gelatinous precipitates in acid/alkali solutions during gravimetric analysis.

F2142 GRADE - Slow Filtration

Hardened ashless filter paper with high retention and slow flow rate. High chemical resistance. Often used for filtering very fine precipitates and in gravimetric metal determinations.

Order Information

GRADE	F2140	F2141	F2142	F2050	F2052	F2054
Dia. (mm)	*Hardened Ashless (100/box)*			*Hardened Low Ash (100/box)*		
42,5	----	----	----	F2050-042	F2052-042	F2054-042
47	----	----	----	F2050-047	F2052-047	F2054-047
55	----	----	----	F2050-055	F2052-055	F2054-055
70	F2140-070	F2141-070	F2142-070	F2050-070	F2052-070	F2054-070
90	F2140-090	F2141-090	F2142-090	F2050-090	F2052-090	F2054-090
110	F2140-110	F2141-110	F2142-110	F2050-110	F2052-110	F2054-110
125	F2140-125	F2141-125	F2142-125	F2050-125	F2052-125	F2054-125
150	F2140-150	F2141-150	F2142-150	F2050-150	F2052-150	F2054-150
185	F2140-185	F2141-185	F2142-185	F2050-185	F2052-185	F2054-185
200	----	----	----	F2050-200	F2052-200	F2054-200
240	F2140-240	F2141-240	F2142-240	F2050-240	F2052-240	F2054-240
320	----	----	----	F2050-241	F2052-241	F2054-241
Size (mm)	*Hardened Ashless (100/box)*			*Hardened Low Ash (100/box)*		
460 x 570	----	----	----	F2050-460570	F2052-460570	F2054-460570

filtration

CHM® Hardened Low Ash **Filter papers for quantitative analysis**

These filters, made from cotton linters fibre, are put through a washing process and treated with strong acids, and then baths in demineralized water, to produce high wet strength (makes them appropriate for filtering in low pressure or vacuum conditions) and chemical resistance (makes them suitable to work with acids or alkaline solutions in moderate concentrations).A very low ash-content filter with a 0.06%(the maximum ash contents of these filters is intermediate between CHM qualitative grades and ashless quantitative grades), very smooth surface, it makes easy to recover the whole of the precipitate after the filtration which is particularly indicated for Buchner filtrations.

F2050 GRADE – Slow Filtration
It is the thinnest CHM filter with slow filtering rate, with excellent retention of very fine particles, such as barium sulphate, zinc sulphide, etc. Hardened and glazed surface makes this paper suitable for use in the electronical industry in carriers of electronical components or boards.

F2052 GRADE - Medium Fast Filtration
General purpose hardened filter paper with medium-rate filtering, with good retention of medium particles, such as calcium oxalate and metal sulphides. Suitable for various tests on the intake of atmospheric pollution (sulphur oxides, ammonia gases, etc.) and also for the microbiological analysis of water.
They are used in fat extraction equipment as well in the oilseed and food industries, and in a large number of routine analytic procedures. Ask for our 3 pieces filter funnels.

F2054 GRADE - Fast Filtration
The fastest filter paper in the range. Suitable for filtering coarse, gelatinous or dense liquids. Good load capacity.

Technical Specifications

GRADE	Properties	Weight g/m²	Thickness µm	Retention range µm	Ash content %
F2050	Slow	90	180	3 - 4	<0.06
F2052	Medium-Fast	90	190	7 - 8	<0.06
F2054	Fast	90	200	20 - 25	<0.06

2 SPECIALITIES

Glass Microfibre Filters

Quartz Microfibre Filters

pH indicator papers

Filter Paper in Reams

CHM® Glass Microfibre **Filters**

APPLICATIONS

- **Food Industry.** Determination of the amount of insoluble contaminants in animal and vegetable fats and oils; Membrane prefilter for the determination of crop protection agent residues by GC or HPLC
- **Beverage industry:** Cold sludge determination of beer; Removing protein from difficult-to-filter beers
- **Biology/Biochemistry:** Harvesting cells; Biochemical studies (e.g.: DNA, RNA, proteins, poly-saccharides); Chlorophyll determination; Phytoplankton residues
- **Environmental analysis:** Determination of PCB, DDE, DDT, furans and dioxins in the air; Determination of filterable substances and the residue on ignition (dry weight) according to the German Standard Methods for the examination of water, waste water and sludge; Work according to DIN 53 991: pollution measurements in industrial, urban and populated areas, cement factories, iron and steel industry, dust measurements at the workplace, determination of the dust fraction in technical gases, testing the effectiveness of dust-collecting and filter plants
- **Others:** Determination of paper bleeding; Analysis of aggressive media (e.g. acidic gases); Determination of the elemental iron content in the presence of iron oxides

CHEMITON offers a wide range of Glass microfibre filters made of 100% borosilicate glass fibers. The depth structure of the filter with its large surface area provides an outstanding impurity retention capacity combined with a low filter resistance.

Glass fiber filters adsorb the finest particles down to 1 µm from liquids and < 1 µm in air and gases (even aerosols with this particle diameter are separated), as the electrostatic interaction between the glass fibers and gases is better than between glass fibers and liquids.

Temperature resistant up to 500ºC (with organic binders up to 180ºC)

GF1 GRADE (1,6 µm)

Particularly suited to atmospheric pollution controls-specifically, intake controls and ozone-level measurements. This product is used in testing for algae in water, in general water controls and in waste water analysis. Its use for filtering solvents in high-resolution laboratories is recommended. The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

GF2 GRADE (1,0 µm)

Its most important application is membrane pre-filtration. The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

GF3 GRADE (1,2 µm)

This is the most suitable filter for testing for solids in suspension in water, in accordance with the parameters set by the EN European regulations, and in general for any work in water control and drinking or waste water analysis, including clarification processes.In biochemical tests, it is very useful for analysing carbohydrates, cellular cultures, etc.The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

GF4 GRADE (2,7 µm)

The most widespread use of this is in membrane pre-filtering. Its high particle retention ensures that the sample is properly clarified before passing through surface filters (membrane filters).The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

GF5 GRADE (0,7 µm)

This is the filter with the highest retention performance of the range, and so it is particularly suited for filtering samples and solvents for HPLC, this pre-filtration being most important for ensuring the success of the test. It is also suitable for biochemical test, such as clarifications, protein filtrations, cellular cultures, etc.The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

GF6 GRADE (1,5 µm)

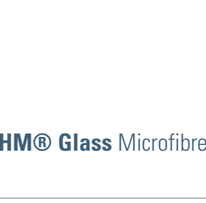
Suitable for atmospheric pollution control, particularly in testing for air intake levels. It is also appropriate for waste water control, testing for solids in suspension, dissolved solids and volatile matter in accordance with the parameters set by the American Standard Methods. It is also suitable for cellular cultures.The Trace Element Levels were obtained with an AAS (Atomic Absorption Spectrometer) with 100% dissolved fibreglass.

Technical Specifications

GRADE	Retention range µm	Weight g/m²	Thickness mm	Retention DOP	Binder
GF1	1,6	52	0,26	25 - 30	NO
GF2	1,0	143	0,70	20 - 25	NO
GF3	1,2	53	0,26	10 - 13	NO
GF4	2,7	120	0,53	7 - 9	NO
GF5	0,7	75	0,45	2 - 4	NO
GF6	1,5	65	0,28	1 - 3	NO

Order Information

GRADE	GF1	GF2	GF3	GF4	GF5	GF6
Dia. (mm)		*Grades Circles (100/box)*				
25	GF1-025	GF2-025	GF3-025	GF4-025	GF5-025	GF6-025
37	GF1-037	GF2-037	GF3-037	GF4-037	GF5-037	GF6-037
42,5	GF1-042	GF2-042	GF3-042	GF4-042	GF5-042	GF6-042
47	GF1-047	GF2-047	GF3-047	GF4-047	GF5-047	GF6-047
55	GF1-055	GF2-055	GF3-055	GF4-055	GF5-055	GF6-055
70	GF1-070	GF2-070	GF3-070	GF4-070	GF5-070	GF6-070
90	GF1-090	GF2-090	GF3-090	GF4-090	GF5-090	GF6-090
100	GF1-100	GF2-100	GF3-100	GF4-100	GF5-100	GF6-100
110	GF1-110	GF2-110	GF3-110	GF4-110	GF5-110	GF6-110
125	GF1-125	GF2-125	GF3-125	GF4-125	GF5-125	GF6-125
150	GF1-150	GF2-150	GF3-150	GF4-150	GF5-150	GF6-150
Size		*Grades Sheets (100/box)*				
203 x 254	GF1-203254	GF2-203254	GF3-203254	GF4-203254	GF5-203254	GF6-203254



CHM® Quartz Microfibre **Filters**

APPLICATIONS

- **Pollution measurements at very high temperatures (up to 1000ºC)**
- **Analysis of aggressive media (e.g. acidic gases)**

The CHM quartz microfibre filters are clarifying depth-filters, made with pure quartz microfibres (Si O2), with no binders or additives of any kind.
These filters have retention, loading and air permeability features similar to those of the glass microfibre filters. However, since they have greater chemical resistance at high temperatures, they can be used in environments in which extreme conditions are present, these filters thus being the replacement for glass microfibre filters in such cases. They are used notably in emission control work for industrial chimneys, and in general they allow gravimetric testing in any gas evacuation control process. They are suitable for ascertaining the level of heavy metals in atmospheric pollution studies.

Characteristics:

Retention: Excellent retention levels for very fine particles, on account of the adsorption mechanisms of the quartz fibres.
Permeability to the air: Very high, enabling large volumes of air to pass through, they thus being appropriate for use in high-volume intakes.
Temperature stability: Their temperature stability is higher than that of the glass microfibre filters. It is very good up to 950 ºC, some loss of their usual properties setting in beyond that point.
Chemical stability: Excellent stability, with practically no filter-mass losses through chemical reactions under extreme conditions with the presence of acid gases (HF, HC1, SO2, H2, SO4, NO and NO3).

Technical Specifications

GRADE gr/m²	Gramaje mm	Thickness
QF-1	85,0	0,38
Retention DOP (%) a 0.3 um	Maximum Temperature ºC	Binder
100,00	900	NO

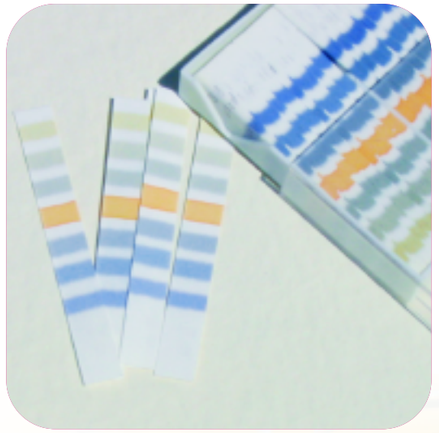
Order Information

Grade *Dia. (mm)*	QF1 *QF1 Grades Circles (25/box)*
25	QF1-025
37	QF1-037
47	QF1-047
55	QF1-055
70	QF1-070
90	QF1-090
100	QF1-100
110	QF1-110
125	QF1-125
150	QF1-150
Grade *Size*	QF-1 *QF1 Grades Sheets (25/box)*
203 x 254	QF1-203254

CHM® pH indicator **papers**

CHEMITON offers a wide range of pH indicator paper. The CHM E2000 is the easiest, fastest and most acuratted way to test for the pH of a solution. An instant pH reading is clearly obtained as a result of combination color differences.

pH indicator papers are available as individual support strips or rolls.



CHM® Filter Paper in Reams

APPLICATIONS

- Protecting worktops in laboratories
- Simple filtering operations for various products
- Sterilizing utensils
- Preparing pharmaceutical products

The range of CHM filter paper reams is made from high quality cellulose fibres, assuring good wet strength and high absorption capacity, these being essential features of these papers.

F4573 GRADE Thick Paper
This is the thickest quality in the range, being particularly suitable for general laboratory work requiring high absorption power.

F4560 GRADE Medium Thickness
Filter paper of medium thickness and basis weight, with excellent absorption properties. Available in reams and other formats.

F4550 GRADE Fine
This paper is finer and has a lower basis weight than the other references.

Technical Specifications

GRADE	Weight g/m²	Thickness mm	Absortion Klemm	Wet traction resistance	Binder
F4573	73	0,170	75/70	0.290/0.260	NO
F4560	60	0,130	60/55	0.280/0.230	NO
F4550	50	0,115	55/55	0.260/0.190	NO

Order Information

GRADE *Size (cm)*	F4573	F4560 *Reams 500 Sheets/box*	F4550
32x42	F4573-320420Q	F4560-320420Q	F4550-320420Q
42x52	F4573-420520Q	F4560-420520Q	F4550-420520Q
50x50	F4573-500500Q	F4560-500500Q	F4550-500500Q
52x52	F4573-520520Q	F4560-520520Q	F4550-520520Q
58x58	F4573-580580Q	F4560-580580Q	F4550-580580Q

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3 EXTRACTION

Cellulose Extraction Thimbles

Glass Microfibre Extraction Thimbles

Phase Separator paper

CHM® Extraction **Thimbles**

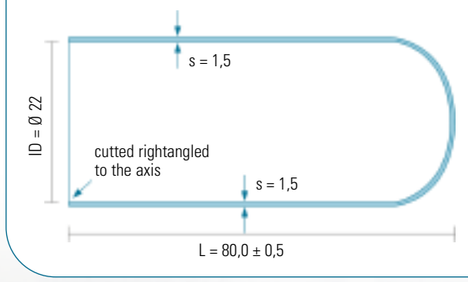
APPLICATIONS

- **Extracting fats in foodstuffs, paints, varnishes, bituminous materials, etc.**
- **Extracting sulphur from gaseous masses**
- **Residual Medication levels**
- **Measuring industrial gases**
- **Gas emission control in internal combustion engines**
- **Wood**

CHM F5800 high quality Cellulose Extraction Thimbles are made from high-alpha cellulose cotton linters. Their main features of high purity and the strong mechanical structure and retentivity offer a special combination of advantages to the laboratory user. Maximum operating temperature 200ºC.

They are usually used in extractors of the "Soxhlet", "Tecator" or similar types, in order to collect solid material from which some component must be separated out by dissolving in a suitable solvent.
The thimbles size selection should be done carefully to fit extractors correctly. The references sizes are internal diameter and the length in mm (an extra allowance for wall thickness should be added when selecting external diameters).

Technical Specifications



Dimensions of an extraction thimble

ID = Inner diameter in mm
L = Length in mm
s = Wall thickness in mm

Order Information

GRADE *intxlenght*	F5800				
10x50	F5800-10050	25x100	F5800-25100	33x100	F5800-33100
16x100	F5800-16100	26x60	F5800-26060	33x118	F5800-33118
19x90	F5800-19090	27x80	F5800-27080	35x50	F5800-35050
20x45	F5800-20045	27x100	F5800-27100	35x60	F5800-35060
22x50	F5800-22050	28x80	F5800-28080	35x80	F5800-35080
22x60	F5800-22060	28x85	F5800-28085	35x90	F5800-35090
22x80	F5800-22080	28x100	F5800-28100	35x100	F5800-35100
22x100	F5800-22100	28x118	F5800-28118	35x110	F5800-35110
23x80	F5800-23080	30x45	F5800-30045	35x150	F5800-35150
24x110	F5800-24110	30x60	F5800-30060	40x100	F5800-40100
25x60	F5800-25060	30x77	F5800-30077	40x123	F5800-40123
25x65	F5800-25065	30x80	F5800-30080	43x123	F5800-43123
25x70	F5800-25070	30x100	F5800-30100	50x160	F5800-50160
25x75	F5800-25075	33x80	F5800-33080	53x145	F5800-53145
25x80	F5800-25080	33x94	F5800-33094	60x120	F5800-60120

F5800 CET (25/box)

CHM F5900 high quality glass microfiber thimbles are made from 100% pure borosilicate fibres, have a special advantages since no binders of any kind are used in their manufacture. They have all the associated properties (high loading capacity, high retention of very small particles, high air permeability and good stability at high temperatures) and the same limitation when working with highly concentrated acid or alkaline solutions, for which the use of CHM F5900 quartz microfibre thimbles is recommended.

They are particularly suitable when solvents that are incompatible with cellulose thimbles are present. They are widely used for gas emission controls for industrial chimneys for gas pre-filtration upstream of measuring apparatus, for gravimetric testing for dust in hot gases, etc. Maximum operating temperature for Glass Microfiber 500ºC.

Order Information

GRADE *intxlenght*	F5900
10x50	F5900-10050
19x90	F5900-19090
22x80	F5900-22080
26x60	F5900-26060
30x80	F5900-30080
30x100	F5900-30100
33x80	F5900-33080
33x94	F5900-33094
35x150	F5900-35150
43x123	F5900-43123
53x145	F5900-53145

F5900 GMT (25/box)

Technical Specifications

GRADE	Retention DOP (%) a 0.3 um	Temperature máxima ºC	Ligante
F5900	99,90	500	NO

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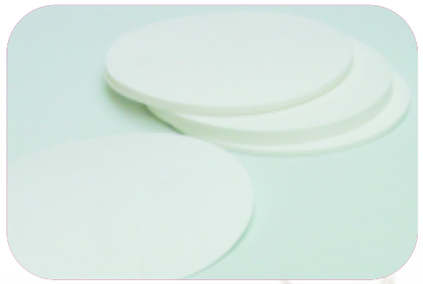
CHM® P1000 Phase Separator Paper

The CHM P1000 Phase Separator is a high grade filter paper mean that separation of aqueous and organic phases is possible with a simple filtration process. The solvent phase allows passage through the organic phase while retaining the aqueous phase. The process terminates when the entire organic phase has passed through the filter, thereby providing a clean, particle-free organic phase.The phase separator paper can be used for all types of organic solutions, such as ether, petroleum, chloroform, etc.

Technical Specifications

GRADE	Filtration	Weight g/m²	Thickness mm
P1000	Medium	85	0,173



Order Information

GRADE *Dia. (mm)*	P1000
70	P1000-070
90	P1000-090
100	P1000-100
125	P1000-125
150	P1000-150
185	P1000-185
200	P1000-200
240	P1000-240
270	P1000-270

P1000 Grades Circles (100/box)

4 DEPTH FILTER

Filter Sheets

Lenticular Modules

Filter Sheets **CHEMIPLAC and lenticular modules CHEMILENT**

ADVANTATGES

- **Even if this filtration system has a higher cost, using it has the following advantages:**
- **It uses less space**
- **Higher germ-free system**
- **Requires less time of assembly and dismantling**
- **Avoids the contact of the product with the environment**

CHM offers a wide range of filter media providing a solution to your solid-liquid separation processes

CHEMIPLAC - CHM filter sheets are made of high quality natural raw materials, such as cellulose, diatomaceous earth and perlite, and used in all conventional sheet or pad filters and allow the stabilisation and clarification of liquids by eliminating the solid particles, colloids and microorganisms that they contain.

The sheets are used for clarification and microbe retentive filtration in in several industries like food, beverage, oenology, edible and mineral oils, pharmaceutical, biotechnology and chemicals, etc.

In a depth filter sheet, the surface area available to retain solids consists not only of the outside of the filter element, but also on the whole surface area of the pores through which the liquid gets filtered. The main advantage of a depth filter sheet is its high capacity to retain pollutants, as opposed to the surface filters, which trap them through the simple mechanical action of superficial sieving.

Technical Specifications *CHM Filter Sheet*

GRADE	Weight (g/m_)	Thickness (mm)	Flow Rate (L/min m_)	Micron Rating* (um)	Microbiological Retention (%)	Filtration Level
C40	700 ± 50	4.00 ± 0.20	3.750	40.0/50.0		clarification
C25	775 ± 50	3.45 ± 0.25	2.286	25.0/35.0		
C20S	775 ± 50	3.35 ± 0.15	1.818	20.0/25.0		
C20	775 ± 25	2.00 ± 0.10	1.510	20.0/25.0		
C18	750 ± 50	3.40 ± 0.20	2.625	18.0/25.0		
C14	800 ± 50	3.20 ± 0.30	3.086	14.0/20.0		
C12	1000 ± 50	3.60 ± 0.10	861	12.0/15.0		
C10	950 ± 50	2.20 ± 0.10	731	10.0/15.0		
C11	850 ± 50	2.80 ± 0.10	1.016	11.0/15.0		
C07	1200 ± 50	4.10 ± 0.10	686	7.0/10.0		
C02	1100 ± 50	3.35 ± 0.25	450	2.0/7.0		
F90	1200 ± 50	3.35 ± 0.25	148	0.9/2.0		fine filtration
F50	1250 ± 50	3.35 ± 0.25	89	0.5/1.0	99,98	
F40	1300 ± 50	3.35 ± 0.25	60	0.4/0.6	99,998	
S30	1350 ± 50	3.35 ± 0.25	55	0.3/0.5	99,999	sterilization microbe retention
S20	1500 ± 50	3.75 ± 0.25	44	0.2/0.3	99,9999	
S15	1500 ± 100	3.85 ± 0.25	48	0.15/0.25	99,99999	
S04	1600 ± 100	3.85 ± 0.25	20	0.04/0.2	99,99999	

** filtration of 0,3L at 1.0 bar trough 0,0012m²*

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Technical Specifications *CHM Filter Sheet with polyethylene*

GRADE	Weight (g/m_)	Thickness (mm)	Flow Rate (L/min m_)	Micron Rating* (um)	Microbiological Retention (%)	Filtration Level
P30	1100 ± 50	2.95 ± 0.15	314	3.0/8.0		medium clarification
P10	1200 ± 50	3.20 ± 0.20	190	1.0/5.0		
P06	1200 ± 50	3.10 ± 0.20	171	0.6/1.0	99,98	fine clarification
P04	1250 ± 50	3.20 ± 0.20	122	0.4/0.6	99,998	
P03	1300 ± 50	3.20 ± 0.20	73	0.3/0.5	99,999	medium sterilization
P02	1450 ± 50	3.50 ± 0.20	48	0.2/0.3	99,9999	

** filtration of 0,3L at 1.0 bar trough 0,0012m²*

Size of filter sheets

Besides the usual sizes of the filter press we can supply our customers with all type of sizes, round or square, with or without holes.

At CHEMITON we have developed a line of filter modules CHEMILENT based on our CHEMIPLAC filter sheet technology that combine all features and benefits of CHEMIPLAC with the benefits of closed filtration system. It offers a greater filter surface and a very uniform porous structure, obtaining the maximum retention.

Structure

The structure of the module is made of 16 lenses that are assembled by a joint system. At the same time, each lens that has been sealed outwardly has 2 CHEMIPLAC filter sheets, an internal divider that guarantees the independence of all the system.

Types of Modules

CL—012 Diameter 12" Surface 1,8 m²
CL—016 Diameter 16" Surface 3,7 m²

Order Information *for ChemiPlac*

CP C02 040 040 H

ChemiPlac (CHM Filter Sheets)

Retention Rate

Clarification		Fine Filtration		Sterilization		With Polyethylene	
C40	40.0/50.0	F90	0.9/2.0	S30	0.3/0.5	P30	3.0/8.0
C25	25.0/35.0	F50	0.5/1.0	S20	0.2/0.3	P10	1.0/5.0
C20S	20.0/25.0	F40	0.4/0.6	S15	0.15/0.25	P06	0.6/1.0
C20	20.0/25.0			S04	0.04/0.2	P04	0.4/0.6
C18	18.0/25.0					P03	0.3/0.5
C14	14.0/20.0					P02	0.2/0.3
C12	12.0/15.0						
C10	10.0/15.0						
C11	11.0/15.0						
C07	7.0/10.0						
C02	2.0/7.0						

Width (cm)

Length (cm)

Quantity per pack

K	50
H	100

Order Information *for ChemiLent*

CL C02 012 16 S

ChemiLent (CHM Lenticular Modules)

Retention Rate

Clarification		Fine Filtration		Sterilization		With Polyethylene	
C40	40.0/50.0	F90	0.9/2.0	S30	0.3/0.5	P30	3.0/8.0
C25	25.0/35.0	F50	0.5/1.0	S20	0.2/0.3	P10	1.0/5.0
C20S	20.0/25.0	F40	0.4/0.6	S15	0.15/0.25	P06	0.6/1.0
C20	20.0/25.0			S04	0.04/0.2	P04	0.4/0.6
C18	18.0/25.0					P03	0.3/0.5
C14	14.0/20.0					P02	0.2/0.3
C12	12.0/15.0						
C10	10.0/15.0						
C11	11.0/15.0						
C07	7.0/10.0						
C02	2.0/7.0						

Modules Diameter

012	12"
016	16"

Number of cells

16	16 cells

Quantity per pack

S	1

5 MICROFILTRATION

Syringe Filters

Membrane Filters

Membrane Hardware

Syringe **filter**

APPLICATIONS

- **Small sample volume preparation**
- **High value sample preparation**
- **HPLC sample preparation**
- **Biological sample preparation**

CHM® SCA syringe filter **for quick and efficient filtration**

CHM®SCA syringe filters are designed for the quick and efficient filtration up to 100 ml of liquid.
Ready-to-use units, offering high flow rates at low inlet pressures, make rapid sterile filtration possible. A filter fitted on a standard dosing syringe makes a very convenient system for simultaneous dosing and sterilization.

Order Information

CHM®SCA 0.2 µm 25mm

a) pack of 50, sterile, individually packed
SCA020025K-S with luer lock outlet
b) pack of 500, non sterile bulk packed:
SCA020025Q with luer lock outlet

CHM®SCA 0.2 µm 25mm
with male luer lock outlet

a) pack of 50, sterile, individually packed
SCA020025K-SML with male luer lock outlet
b) pack of 500, non sterile bulk packed:
SCA020025Q-ML with male luer lock outlet

Technical Specifications *for 0.2 µm CHM®SCA*

Adsorption	Values determined for the cellulose acetate membrane, 0.8-3 µg per cm² with BSA, 8-12 µg per cm² with gamma-globulin. Adsorption of syringe filters units varies due to prefilter
Colour coding	Blue
Connectors	Female Luer Lock inlet and male Luer Lock outlet. Alternatively, for standard syringe filters only, male Luer outlet
Endotoxines	Endotoxin release is below 0.06 EU/ml (detection limit of test)
Filter diameter	26 mm
Filtration area	5.3 cm²
Flow rates	Typical value for water at 1 bar (100 kPa) differential pressure, 60 ml/min
Hold-up volume	0.1 ml
Limits for use	Max. recommended operating pressure, 4.5 bar (450 kPa). Housing resists bursting up to at least 6 bar (600 kPa). Max. temperature, 50°C
Materials	Cellulose acetate membrane filter. Cyrolite (CY/RO Industries trademarked MBS-copolymer) housing

High Flow Rate CHM® SCA syringe filter **for particle removal, ultracleaning and prefiltration**

CHM®SCA High Flow Rate.
Ready-to-use filter units with 0.45 µm, 0.8 µm, 1.2 µm or 5 µm pore size membrane filters fulfil your filtration requirements for clarifying/ultracleaning volumes of up to 100 ml. They can also be used as prefilters in combination with a 0.2 µm CHM®SCA, increasing the total filterable volume.

The high flow rates of these units result from the large filter area and the very low flow resistance of the filter support, which is demonstrated by the relatively constant increase in the flow rate with increasing pore size.

These flow rates contribute to user comfort by lowering the pressure required for filtration. **CHM®SGF** contains a glass fibre filter with a retention efficiency of 98 % for 0.7 µm spherical particles. It is very useful when relatively dirty solutions are to be clarified, or as a prefilter on a 0.2 µm or 0.45 µm **CHM®SCA**.

Technical Specifications

Colour coding	Yellow (0.45 µm), green (0.8 µm), red (1.2 µmm), brown (5µmm), opaque (SGF)
Connectors	emale Luer lock inlet, male Luer lock outlet (the 0.45 µm unit is also available with a male Luer outlet)
Filter diameter	26 mm
Filtration area	5.3 cm²
Flow rates	Typical values for water at differential pressure = 1 bar (100 kPa), 180 ml/min (0.45 µm), 350 ml/min (0.8 µm), 400 ml/min (1.2 µm), 500 ml/min (5 µm), 600 ml/min (SGF)
Hold-up volume	0.1 ml
Limits for use	Max. recommended operating pressure, 4.5 bar (450 kPa). Housing resists bursting up to at least 6 bar (600 kPa). Max. temperature, 50°C
Materials	Cellulose acetate membrane (except SGF). Glass fibre filter SGF). Cyrolite (CY/RO Industries trademarked MBS copolymer) housing

Order Information

Standard 0.45 µm to 5 µm CHM®SCA

a) pack of 50, sterile, individually packed:
SCA045025K-S 0.45 µm with luer lock outlet
SCA080025K-S 0.8 µm with luer lock outlet
SCA120025K-S 1.2 µm with luer lock outlet
SCA500025K-S 5 µm with luer lock outlet

b) pack of 500, non sterile bulk packed:
SCA045025Q 0.45 µm with luer lock outlet
SCA080025Q 0.8 µm with luer lock outlet
SCA120025Q 1.2 µm with luer lock outlet
SCA500025Q 5 µm with luer lock outlet

CHM®SGF units non sterile bulk packed

SGF025K luer lock outlet (pack of 50)
SGF025Q luer lock outlet (pack of 500)

CHM® SNY syringe filter **with Nylon** membrane filter

CHM® SNY syringe filters offers a nylon membrane in a polypropylene housing. Due to their high chemical compatibility and physical strength, these syringe filters are recommended for clarifying and sterilizing HPLC samples up to 200 ml in volume. These units can be autoclaved.

Order Information

CHM® SNY 0.2 µm 25mm
SNY020025H pack of 100 units **SNY020025Q** pack of 500 units
CHM® SNY 0.45 µm 25mm
SNY045025H pack of 100 units **SNY045025Q** pack of 500 units

Technical Specifications

Pore	0.20 µm	0,45 µm
Bubble point	3.4 bar	2.0 bar
Filtration area	4.8 cm^2	
Flow rates	Typical values for water at differential pressure = 1 bar (100 kPa), 110 ml/min (0.45 µm), 65 ml/min (0.2 µm)	
Hold-up volume	0.15 ml	
Limits for use	Max. recommended operating pressure 6 bar (600 kPa). Max. temperature, 21°C/30min	
Materials	Nylon membrane. Polypropylene housing	
Inlet	Luer Lock	
Outlet	Luer Slip	

CHM® SVT Venting syringe filter

CHM® SVT venting syringe filters are reusable units that contain a reinforced PTFE membrane with polypropylene gauze, in a polypropylene housing. These units are lightweight, approx. 20 grams, and easily connected to fermenters or containers and could work at higher pressure. The large filtering surface (20 cm^2) makes it possible to work at high air flow rates even with a low pressure differential.
The units are autoclavable at temperatures up to 121ºC (at least 20 times) or up to 134ºC.

Technical Specifications

Pore	0.20 µm	0,45 µm
Temperature	max. 134ºC	max. 134ºC
Bubble point	1.4 bar (with isopropanol)	
Membrane	Reinforced PTFE	
Housing	Polypropylene	
Area	20 cm^2	
Hold-up volume	0,5 ml	
Maximum pressure	3 bar	
Air flow (p 1 bar)	1,1 l/min (Δp 0,02 bar)	2,9 l/min (Δp 0,05 bar)
Connectors	6-12 mm or 1/8" NTP	6-12 mm or 1/8" NTP

Order Information

CHM® SVT 62mm
SVT045062D-S 0.45 µm pack of 12 units sterile **SVT020062D-S** 0.20 µm pack of 12 units sterile

CHM® STF syringe filter **with PTFE membranes**

CHM® STF Ready-to-use units for simple, rapid and reliable ultracleaning of smallvolume samples for HPLC or GC analysis, where higher chemical resistance is required than offered by CHM® SRC, e.g. for aggressive solvents.

The choice of diameter depends on the volume to be filtered:
vol. <1 ml - Ø 4 mm
vol. <5 ml - Ø 15 mm
vol. <100 ml - Ø 25 mm

Order Information

CHM® STF 4mm

STF045004H with 0.45 µm membrane, pack of 100
STF045004Q with 0.45 µm membrane, pack of 500

CHM® STF 15mm

STF020015H with 0.2 µm membrane, pack of 100
STF020015Q with 0.2 µm membrane, pack of 500
STF045015H with 0.45 µm membrane, pack of 100
STF045015Q with 0.45 µm membrane, pack of 500

CHM®STF 25mm

STF020025H with 0.2 µm membrane, pack of 100
STF020025H-S with 0.2 µm membrane, pack of 100, sterile, individually packed
STF020025Q with 0.2 µm membrane, pack of 500
STF045025H with 0.45 µm membrane, pack of 100
STF045025Q with 0.45 µm membrane, pack of 500

Technical Specifications

Bubble point	Isopropanol wetted, 0.9 bar (0.45 µm), 1.4 bar
Connectors	Female luer lock inlet, male luer slip outlet (STF-015 is also available with a small spike outlet)
Diameter	4 mm (STF-004), 15 mm (STF-015), 25 mm (STF-025)
Filter area	0.07 cm^2(STF-004), 1.7 cm^2(STF-015), 4.8cm^2 (STF-025)
Flow rates	Typical values at differential pressure = 1 bar (100 kPa) *a) for ethanol* — *0.45 µm* — *0.2 µm* STF-004 — 2.0 ml/min STF-015 — 65 ml/min — 25 ml/min STF-025 — 130 ml/min — 70 ml/min *b) for methanol* — *0.45 µm* — *0.2 µm* STF-004 — 4.5 ml/min STF-015 — 150 ml/min — 55 ml/min STF-025 — 260 ml/min — 160 ml/min *c) for air* — *0.45 µm* — *0.2 µm* STF-004 — 0.06 l/min STF-015 — 1.1 l/min — 0.5 l/min STF-025 — 2.2 l/min — 1.7 l/min
Hold-up	Hold-up volumes: 1 µl (STF-004), 10 µl (STF-015), 100 µl (STF-025)
Limits	Max. operating pressure and min. housing burst pressure, 6.0 bar (600 kPa). Max temperature, 121°C (autoclave).
Materials	PTFE membrane filter. Polypropylene housing.
Wetting	Water penetration pressure, 3.0 bar (300 kPa) for 0.45 µm, 4 bar (400 kPa) for 0.2 µm

CHM® SRC syringe filter **resistant**
Regenerated Cellulose membranes

CHM® SRC units outperform competitive hydrophilic units in terms of compatibility with aqueous solutions and solvent mixtures.
These CHM Ready-to-use syringe filter units for simple, rapid and reliable ultracleaning of small-volume samples for HPLC or GC analysis.
These units can be autoclaved.
These syringes find numerous applications: sterilization of samples for HPLC is the most useful.

Technical Specifications

Connectors	Female luer lock inlet, male luer slip outlet
Diameters	4 mm (SRC-004), 15 mm (SRC-015), 25 mm (SRC-025)
Filter area	0.07 cm^2 (SRC-004). 1.7 cm^2 SRC-015). 4.8 cm^2 (SRC-025)
Flow rates	Typical values at differential pressure = 1 bar (100 kPa)

a) for hexane	*0.45 µm*	*0.2 µm*
SRC-004	10 ml/min	5 ml/min
SRC-015	280 ml/min	140 ml/min
SRC-025	430 ml/min	230 ml/min
b) for methanol	*0.45 µm*	*0.2 µm*
SRC-004	3.0ml/min	1.5 ml/min
SRC-015	105 ml/min	55 ml/min
SRC-025	325 ml/min	160 ml/min
c) for water	*0.45 µm*	*0.2 µm*
SRC-004	2.0 ml/min	1.0 ml/min
SRC-015	30 ml/min	10 ml/min
SRC-025	100 ml/min	40 ml/min

Limits	Max. operating pressure and min. housing burst pressure, 6.0 bar (600 kPa). Max temperature, 121°C (autoclave).
Materials	Regenerated cellulose membrane. Polypropylene housing
Volume	Priming/holding-up volumes: 0.17 ml/ 5 µl (SRC-004), 0.2 ml/10 µl (SRC-015). Approx. 0.95 ml/ 150 µl (SRC-025)

Compatibility:

Acetone	Hexane
Acetonitrile	Isobutanol
Gasoline	Isopropanol
n-Butanol	Methanol
Cellosolve (ethyl)	Methylene chloride
Chloroform	Methyl ethyl ketone
Diethyl acetamide	Pentane
Dimethyl sulfoxide	Tetrahydrofuran
Dioxane	Toluene
Acetic acid (96%)	Trichloroacetic
Ethanol	acid (25%)
Ethyl acetate	Trichlorethane
Ethylene glycol	Water
Freon TF	Xylene

The choice of diameter depends on the volume to be filtered:
vol. <1 ml - ø 4 mm
vol. <5 ml - ø 15 mm
vol. <100 ml - ø 25 mm

Order Information

CHM® SRC 4mm

SRC020004H with 0.2 µm membrane, pack of 100
SRC020004Q with 0.2 µm membrane, pack of 500
SRC045004H with 0.45 µm membrane, pack of 100
SRC045004Q with 0.45 µm membrane, pack of 500

CHM® SRC 15mm

SCR020015H with 0.2 µm membrane, pack of 100
SRC020015Q with 0.2 µm membrane, pack of 500
SRC045015H with 0.45 µm membrane, pack of 100
SRC045015Q with 0.45 µm membrane, pack of 500

CHM® SRC 25mm

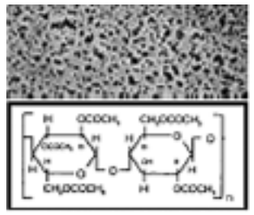
SRC020025H with 0.2 µm membrane, pack of 100
SRC020025Q with 0.2 µm membrane, pack of 500
SRC045025H with 0.45 µm membrane, pack of 100
SRC045025Q with 0.45 µm membrane, pack of 500

CHM® MCA Cellulose Acetate **Membrane Low adsorption**

Cellulose Acetate membranes, type MCA, for the filtration of aqueous solutions.

These membranes combine high flow rates and thermal stability with very low adsorption characteristics, making the 0.2 µm pore size excellently suited for use in disc filter holders to sterilize aqueous solutions, buffers, sera and media. They are also low in extractables and can be repeatedly autoclaved.

Typical applications include cytology, aqueous solution filtration and filtration of enzyme solutions to minimise protein loss.



Technical Specifications

- Extractables with water less than 1%
- Autoclaving at 121°C or 134°C
- Bubble Point minimum value for 0.2 µm = 3.5 bar (350 kPa), (wetted with water) for 0.45 µm = 2.0 bar (200 kPa), for 0.65 µm = 1.3 bar (130 kPa), for 0.8 µm = 0.8 bar (80 kPa)
- Chemical compatibility resistant to aqueous solutions, pH 4–8, against most alcohols, hydrocarbons and oils
- Thickness average value 135 µm
- Flow rate for water average value per cm^2 area at Δp = 1 bar (100 kPa): 22 ml/min for 0.2 µm, 69 ml/min for 0.45 µm, 130 ml/min for 0.65 µm, 200 ml/min for 0.8 µm pore size
- Material cellulose acetate
- Sterilizing filtration filters with 0.2 µm pore sizes are validated by Bacteria Challenge Tests.
- Sterilization by autoclaving, with - radiation, or ethylene oxide
- Thermal stability max. 180°C

Order Information

13 mm diameter

MCA080013H 0.8 µm, pack of 100
MCA045013H 0.45 µm, pack of 100
MCA020013H 0.2 µm, pack of 100

25 mm diameter

MCA080025H 0.8 µm, pack of 100
MCA065025H 0.65 µm, pack of 100
MCA045025H 0.45 µm, pack of 100
MCA020025H 0.2 µm, pack of 100

47 mm diameter

MCA080047H 0.8 µm, pack of 100
MCA065047H 0.65 µm, pack of 100
MCA045047H 0.45 µm, pack of 100
MCA020047H 0.2 µm, pack of 100

90 mm diameter

MCA080090T 0.8 µm, pack of 25
MCA065090T 0.65 µm, pack of 25
MCA045090T 0.45 µm, pack of 25
MCA020090T 0.2 µm, pack of 25

142 mm diameter

MCA080142T 0.8 µm, pack of 25
MCA065142T 0.65 µm, pack of 25
MCA045142T 0.45 µm, pack of 25
MCA020142T 0.2 µm, pack of 25

293 mm diameter

MCA080293T 0.8 µm, pack of 25
MCA065293T 0.65 µm, pack of 25
MCA045293T 0.45 µm, pack of 25
MCA020293T 0.2 µm, pack of 25

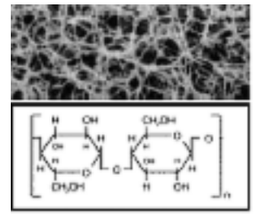
CHM® MRC Regenerated Cellulose Membrane Chemical Resistance

CHM® MRC - Regenerated Cellulose membranes for the filtration of organic solvents. These solvent-resistant, hydrophilic membrane filters are excellently suited for their major application, particle removal from solvents.

The 50 mm diameter, 0.45 µm pore size filter, for example, is standardly used ultraclean and de-gas solvents and mobile phases for HPLC, in combination with the All-glass holder. Regenerated cellulose membranes also feature low non-specific adsorption.

They are compatible with:

- Acetone
- Acetonitrile
- Gasoline
- n-Butanol
- Cellosolve (ethyl)
- Chloroform
- Diethyl acetamide
- Dimethylsulfoxide
- Dioxane
- Acetic acid (96%)
- Ethanol
- Ethyl acetate
- Ethylene glycol
- Freon TF
- Hexane
- Isobutanol
- Isopropanol
- Methylene
- Methylene chloride
- Methyl ethyl ketone
- Pentane
- Tetrahydrofuran
- Toluene
- Trichloroacetic acid (25%)
- Trichlorethane
- Water
- Xylene



Order Information

13 mm diameter

MRC045013H 0.45 µm (pack of 100)
MRC020013H 0.2 µm (pack of 100)

25 mm diameter

MRC045025H 0.45 µm (pack of 100)
MRC020025H 0.2 µm (pack of 100)

47 mm diameter

MRC045047H 0.45 µm (pack of 100)
MRC020047H 0.2 µm (pack of 100)

142 mm diameter

MRC045142T 0.42 µm (pack of 25)
MRC020142T 0.2 µm (pack of 25)

293 mm diameter

MRC045293T 0,45 µm (pack of 25)
MRC020293T 0,2 µm (pack of 25)

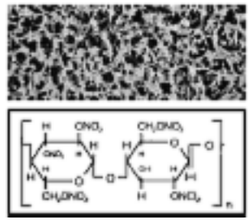
Other pore sizes and diameters are available under request

Technical Specifications

- Adsorption Ca.24 µg/cm^2 for 0.2 µm pore size, 18 µg/cm^2 for 0.45 µm pore size
- Extractables With water, less than 1%
- Bubble-Point Min. values, wetted with water, 4.7 bar (470 kPa) for 0.2 µm, 3.0 bar (300 kPa) for 0.45 µm
- Chemical compatibility Resistant to almost all solvents (see table below left) and aqueous solutions in the pH-range 3–12.
- Thickness average value 160 µm
- Flow rate Average value per cm^2 area for water at 1 bar (100 kPa) pressure, 20 ml/min for 0.2 µm, 47 ml/min for 0.45 µm pore size
- Material Regenerated cellulose, reinforced with non-woven cellulose
- Sterilization By autoclaving (at 121°C or 134°C), Dry heat (180°C), and gamma radiation (25 kGy) or with ethylene oxide
- Validation The correlation of the bubble point values of the membranes of 0.2 µm pore size to the reliability of sterilizing filtration has been validated by standard Bacteria Challenge Tests.

CHM® MCN Cellulose Nitrate Membrane High Adsorption

Cellulose Nitrate membranes, type MCN, for sample pretreatment, particle testing and chemotaxis



Technical Specifications

- Extractables with water less than 1%
- Sterilization by autoclaving, at 121°C
- Bubble Point wetted with water, minimum values:
  - 0.3 bar (30 kPa) for 8 µm pore size
  - 0.5 bar (50 kPa) for 5 µm pore size
  - 0.6 bar (60 kPa) for 3 µm pore size
  - 1.0 bar (100 kPa) for 1.2 µm pore size
  - 1.4 bar (140 kPa) for 0.8 µm pore size
  - 2.0 bar (200 kPa) for 0.65 µm pore size
  - 2.5 bar (250 kPa) for 0.45 µm pore size
- Chemical compatibility resistant to aqueous solutions in the pH-range 4–8, to hydrocarbons and to some solvents
- Thickness between 90 µm (0.1 µm) and 140 µm (8 µm), according to pore size
- Flow rate for water average values per cm^2 area at Δp = 1 bar (100 kPa):
  - 750 ml/min for 8 µm pore size
  - 570 ml/min for 5 µm pore size
  - 430 ml/min for 3 µm pore size
  - 320 ml/min for 1.2 µm pore size
  - 200 ml/min for 0.8 µm pore size
  - 130 ml/min for 0.65 µm pore size
  - 69 ml/min for 0.45 µm pore size
- Material cellulose nitrate
- Sterilization by autoclaving, - radiation (25 kGy) or with ethylene oxide
- Thermal stability max. 130°C

Sterile, individually packed membrane filters have long become standard for routine microbiological quality control because of the user benefits they offer. They are ready-to-use and save preparatory time, they avoid the possibility of contamination of remaining filters in opened packs and are TLP conform, having filter identification and lot number printed on each individual envelope.

All of the gridded membranes are made of cellulose nitrate, a material which assures excellent retention and optimum colony growth. The grid size is 3.1 x 3.1 mm. The various colours allow the selection of the type which gives the best contrast to the colonies which are to be counted.
Hydrophobic edge membranes are used mainly in the sterility testing of solutions containing antibiotics.

Order Information

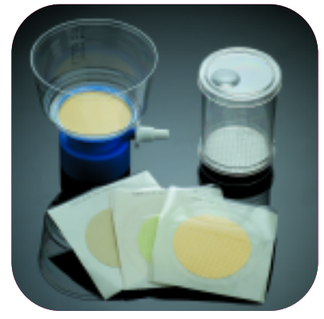
13 mm diameter	25 mm diameter	47 mm diameter
MCN800013H 8 µm, pack of 100	**MCN800025H** 8 µm, pack of 100	**MCN800047H** 8 µm, pack of 100
MCN500013H 5 µm, pack of 100	**MCN500025H** 5 µm, pack of 100	**MCN500047H** 5 µm, pack of 100
MCN300013H 3 µm, pack of 100	**MCN300025H** 3 µm, pack of 100	**MCN300047H** 3 µm, pack of 100
MCN080013H 0.8 µm, pack of 100	**MCN120025H** 1.2 µm, pack of 100	**MCN120047H** 1.2 µm, pack of 100
MCN045013H 0.45 µm, pack of 100	**MCN080025H** 0.8 µm, pack of 100	**MCN080047H** 0.8 µm, pack of 100
	MCN065025H 0.65 µm, pack of 100	**MCN065047H** 0.65 µm, pack of 100
	MCN045025H 0.45 µm, pack of 100	**MCN045047H** 0.45 µm, pack of 100
90 mm diameter	142 mm diameter	293 mm diameter
MCN500090T 5 µm, pack of 25	**MCN500142T** 5 µm, pack of 25	**MCN500293T** 5 µm, pack of 25
MCN120090T 1.2 µm, pack of 25	**MCN120142T** 1.2 µm, pack of 25	**MCN120293T** 1.2 µm, pack of 25
MCN080090T 0.8 µm, pack of 25	**MCN080142T** 0.8 µm, pack of 25	**MCN080293T** 0.8 µm, pack of 25
MCN045090T 0.45 µm, pack of 25	**MCN045142H** 0.45 µm, pack of 25	**MCN045293** 0.45 µm, pack of 25

Order Information

47 mm and 50 mm filters are, in some pore sizes available, sterile, individually packed, in packs of 100.

47 mm diameter

MCN800047H-S 8 µm
MCN300047H-S 3 µm
MCN120047H-S 1.2 µm
MCN080047H-S 0.8 µm
MCN065047H-S 0.65 µm
MCN045047H-S 0.45 µ m



CHM® CN Cellulose Nitrate Gridded Membrane filters

Cellulose Nitrate Gridded Membranes, sterile and individually packed, for colony counts Sterile, individually packed membrane filters have long become standard for routine microbiological quality control because of the user benefits they offer. They are ready-to-use and save preparatory time, they avoid the possibility of contamination of remaining filters in opened packs and are GLP conform, having filter identification and lot number printed on each individual envelope.

All of the gridded membranes are made of cellulose nitrate, a material which assures excellent retention and optimum colony growth. The grid size is 3.1 x 3.1 mm. The various colours allow the selection of the type which gives the best contrast to the colonies which are to be counted.
Hydrophobic edge membranes are used mainly in the sterility testing of solutions containing antibiotics.

Order Information *for sterile, individually packed membrane filters*

1. Type MNW, white with black grid, for colony counts

47 mm diameter discs:

a) In packs of 100
MNW120047H-SG 1.2 µm
MNW080047H-SG 0.8 µm
MNW065047H-SG 0.65 µm
MNW045047H-SG 0.45 µm
MNW020047H-SG 0.2 µm

b) In packs of 1000
MNW120047M-SG 1.2 µm
MNW080047M-SG 0.8 µm
MNW045047M-SG 0.45 µm

50 mm diameter discs

a) In packs of 100
MNW080050H-SG 0.8 µm
MNW065050H-SG 0.65 µm
MNW045050H-SG 0.45 µm
MNW020050H-SG 0.2 ≤µm

b) In packs of 1000
MNW045050M-SG 0.45 µm

2. Type MNB, gray (black when wet) with white grid, for the detection of yeasts and moulds

47 mm diameter discs

a) In packs of 100
MNB080047H-SW 0.8 µm
MNB065047H-SW 0.65 µm
MNB045047H-SW 0.45 µm

b) In packs of 1000
MNB080047M-SW 0.8 µm
MNB045047M-SW 0.45 µm

50 mm diameter discs

a) In packs of 100
MNB080050H-SW 0.8 µm
MNB065050H-SW 0.65 µm
MNB045050H-SW 0.45 µm

b) In packs of 1000
MNB065050M-SW 0.65 µm
MNB045050M-SW 0.45 µm

Order Information *for sterile, individually packed membrane filters*

3. Type MNG, green with dark green grid, for colony counts

47 mm diameter discs	50 mm diameter discs
MNG045047H-SV 0.45 µm (pack of 100) **MNG045047M-SV** 0.45 µm (pack of 1000)	**MNG045050H-SV** 0.45 µm (pack of 100) **MNG045050M-SV** 0.45 µm (pack of 1000)

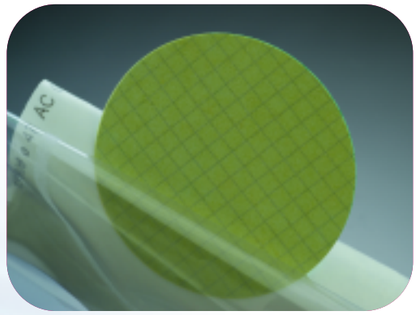
4. Type MNW, white with green grid, for E. coli and coliforms

47 mm diameter discs	50 mm diameter discs
a) In packs of 100: **MNW045047H-SV** 0.45 µm *b) In packs of 1000:* **MNW045047M-SV** 0.45 µm	*a) In packs of 100:* **MNW045050H-SV** 0.45 µm *b) In packs of 1000:* **MNW045050M-SV** 0.45 µm

5. Type MNW, white with black grid and pink-coloured hydrophobic edge, for sterility testing

47 mm diameter discs, in packs of 100	50 mm diameter discs in packs of 100
MNW045047H-SGP3 0.45 µm **MNW020047H-SGP3** 0.2 µm	**MNW045050H-SGP3** 0.45 µm **MNW020050H-SGP3** 0.2 µm

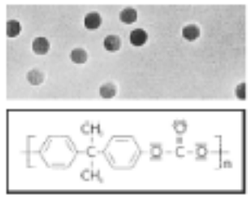
With 3 mm hydrophobic edge (also available with 6mm hydrophobic edge)



CHM® MPC Polycarbonate Membrane filters

CHM®MPC Polycarbonate Membranes are manufactured from high grade polycarbonate film using track-etch technology. They retain particles on their surfaces. Their capillary pore structure is uniform and precise, with a narrow pore size distribution.
Track-etch membranes are an excellent choice for accurate fractionation of particulates because of their precise pore size. In addition, their smooth, flat surface results in high particulate visibility.

Track-etch technology offers the user distinct performance advantages when excellent surface capture and high
sample visibility are required. Applications: Particulate analysis, epifluorescence microscopy, fluid clarification, cytology, cell biology, bioassays, water microbiology, environmental analysis.



Order Information

25 mm diameter

MPC100025H 1.0 µm, pack of 100, diameter 25 mm
MPC080025H 0.8 µm, pack of 100, diameter 25 mm
MPC060025H 0.6 µm, pack of 100, diameter 25 mm
MPC045025H 0.45 µm, pack of 100, diameter 25 mm
MPC040025H 0.4 µm, pack of 100, diameter 25 mm
MPC020025H 0.2 µm, pack of 100, diameter 25 mm
MPC010025H 0.1 µm, pack of 100, diameter 25 mm

47 mm diameter

MPC100047H 1.0 µm, pack of 100, diameter 47 mm
MPC080047H 0.8 µm, pack of 100, diameter 47 mm
MPC060047H 0.6 µm, pack of 100, diameter 47 mm
MPC045047H 0.45 µm, pack of 100, diameter 47 mm
MPC040047H 0.4 µm, pack of 100, diameter 47 mm
MPC020047H 0.2 µm, pack of 100, diameter 47 mm
MPC010047H 0.1 µm, pack of 100, diameter 47 mm

Other pore sizes (3 µm, 5 µm, 8 µm)
and diameters are available under request

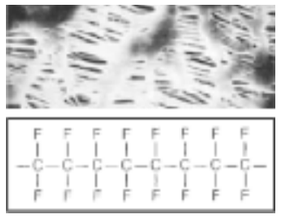
Technical Specifications

Low extractables
Autoclaving, at 121°C
Thermal stability max. temperature 140°C
Bubble Point minimum value for 0.2 µm = 4.8 bar, (wetted with water) for 0.4 µm 2.5 bar
Chemical compatibility see table
Thickness 6 –11 µm
Flow rate for water 20 ml/min/cm² for 0.2 µm, 70 ml/min/cm² for 0.4 µm
Porosity <15 %
Material polycarbonate
Sterilization by autoclaving

CHM® MTF PTFE Membrane - Hydrophobic

CHM® MTF - PTFE membranes.
The main application of this membrane filter type is air/gas filtration. They are made purely of PTFE (polytetrafluoroethylene), and are therefore permanently hydrophobic. Unlike other (hydrophilic) filter types, they are not wetted by air humidity, allowing unhindered passage of air at low differential pressures.

PTFE membrane filters have an excellent chemical compatibility, so they are also used for the filtration of aggressive chemicals, and acids, to which other filter types are not resistant. Due to their hydrophobic characteristics, they must be pre-wetted with ethanol or methanol before the filtration of aqueous media.



Order Information

13 mm diameter	50 mm diameter
MTF120013H 1.2 µm, pack of 100 **MTF045013H** 0.45 µm, pack of 100 **MTF020013H** 0.2 µm, pack of 100	**MTF500050H** 5 µm, pack of 100 **MTF120050H** 1.2 µm, pack of 100 **MTF045050H** 0.45 µm, pack of 100 **MTF020050H** 0.2 µm, pack of 100
25 mm diameter	142 mm diameter
MTF500025H 5 µm, pack of 100 **MTF120025H** 1.2 µm, pack of 100 **MTF045025H** 0.45 µm, pack of 100 **MTF020025H** 0.2 µm, pack of 100	**MTF500142T** 5 µm, pack of 25 **MTF120142T** 1.2 µm, pack of 25 **MTF045142T** 0.45 µm, pack of 25 **MTF020142T** 0.2 µm, pack of 25
47 mm diameter	293 mm diameter
MTF500047H 5 µm, pack of 100 **MTF120047H** 1.2 µm, pack of 100 **MTF045047H** 0.45 µm, pack of 100 **MTF020047H** 0.2 µm, pack of 100	**MTF045293T** 0.45 µm, pack of 25 **MTF020293T** 0.2 µm, pack of 25 *Other pore sizes and diameters are available under request*

Technical Specifications

- Adsorption 8 µg/cm² for gamma-globulin (0.2 µm pore size)
- Extractables with water none detectable
- Autoclaving at 121°C or 134°C
- Bubble Point minimum value for 0.2 µm = 1.2 bar (120 kPa), (wetted with iso-propanol) for 0.45 µm = 0.8 bar (80 kPa). Average value for 1.2 µm = 0.45 bar (45 kPa), for 5 µm = 0.1 bar (10 kPa)
- Chemical compatibility resistant to almost all chemicals
- Thickness average values, 65 µm for 0.2 µm and 100 µm for 5 µm pore size
- Flow rate for air average values per cm² area at Δp = 0.05 bar (5 kPa): 0.2 l/min for 0.2 µm, 0.3 l/min for 0.45 µm, 1.6 l/min for 1.2 µm and 4 l/min for 5 µm pore size
- Material Polytetrafluoroethylene
- Sterilization capacity filters with 0.2 µm pore size are validated with the Bacteria Challenge Test.
- Sterilization by autoclaving or with ethylene oxide

CHM® MNY Nylon Membrane filters

Nylon membranes, type CHM®MNY.
These solvent-resistant, hydrophilic membrane filters are excellently suited for their major application, particle removal from solvents.
CHM® nylon membrane filters are membranes of hydrophilic nature, chemically resistant to most bases, making them particularly indicated for clarification and sterilization of alkaline solutions.

This type of membranes is compatible with most aqueous samples and some organic solvents, being a good alternative for clarification of the mobile phases for HPLC.

These membranes have high non-specific adsorption, which makes them very useful in blotting techniques, mainly for transfer and immobilization of nucleic acids.
They are not recommended for use sterilizing cellular solutions, for which application it is advisable to use the CHM®MCA cellulose acetate membranes.

Order Information

13 mm diameter
MNY045013H 0.45 µm, pack of 100 **MNY020013H** 0.2 µm, pack of 100
25 mm diameter
MNY045025H 0.45 µm, pack of 100 **MNY020025H** 0.2 µm, pack of 100
47 mm diameter
MNY045047H 0.45 µm, pack of 100 **MNY020047H** 0.2 µm, pack of 100
90 mm diameter
MNY045090T 0.45 µm, pack of 25 **MNY020090T** 0.2 µm, pack of 25
142 mm diameter
MNY045142T 0.45 µm, pack of 25 **MNY020142T** 0.2 µm, pack of 25
293 mm diameter
MNY045293T 0.45 µm, pack of 25 **MNY020293T** 0.2 µm, pack of 25

Technical Specifications

- Flow rate value for 0.2 µm = 23ml/min, for 0.45 µm 46ml/min
- Thermal stability max. temperature 140°C
- Bubble Point minimum value for 0.2 µm = 3.4 bar, (wetted with water) for 0.45 µm 2.2 bar
- Chemical compatibility see table
- Thickness 125 µm
- Material nylon

Chemical compatibility

Filter materials

SOLVENTS	CA	CN	RC	TF	GF	PC
Acetone	—	—	□	□	□	?
Acetonitrile	?	?	□	□	?	?
Gasoline	□	□	□	□	□	□
Benzene	□	□	□	□	□	?
Benzyl alcohol	X	X	□	□	□	?
n-Butyl acetate	X	—	□	□	□	□
n-Butanol	□	□	□	□	□	□
Cellosolve	□	—	□	□	□	—
Chloroform	—	□	□	□	□	—
Cycloexane	X	X	□	□	□	□
Cycloexanone	—	—	□	□	□	□
Diethylacetamide	—	—	□	□	□	?
Diethyl ether	□	—	□	□	□	□
Dimethyl formamide	—	—	X	□	X	—
Dimethylsulfoxide	—	—	□	□	□	—
Dioxane	—	—	□	□	□	—
Ethanol, 98%	□	X	□	□	□	□
Ethyl acetate	—	—	□	□	□	?
Ethylene glycol	□	X	□	□	□	□
Formamide	?	?	?	□	□	—
Glycerin	□	□	□	□	□	□
n-Heptane	□	□	□	□	□	?
n-Hexane	□	□	□	□	□	□
Isobutanol	X	X	□	□	□	□
Isopropanol	□	X	□	□	□	□
Isopropyl acetate	X	—	□	□	□	?
Methanol, 98%	□	—	□	□	□	□
Methyl acetate	—	—	□	□	□	?
Methylene chloride	—	X	□	□	□	—
Methyl ethyl ketone	—	—	□	□	□	?
Methyl isobutyl ketone	□	—	□	□	□	?
Monochlorobenzene	□	□	□	□	□	—
Nitrobenzene	□	X	□	□	□	—
n-Pentane	□	□	□	□	□	□
Perchlorethylene	□	□	□	□	□	□
Pyridine	—	—	□	□	□	—
Carbon tetrachloride	X	□	□	□	□	?
Tetrahydrofuran	—	—	□	□	□	—
Toluol	□	□	□	□	□	?

Chemical compatibility

Filter materials

SOLVENTS	CA	CN	RC	TF	GF	PC
Trichlorethane	X	□	□	□	□	?
Trichlorethylene	□	□	□	□	□	—
Xylene	□	□	□	□	□	□
ACIDS	**CA**	**CN**	**RC**	**TF**	**GF**	**PC**
Acetic acid, 25%	□	□	□	□	?	?
Acetic acid, 96%	—	—	□	□	?	?
Hydrofluoric acid, 25%	—	X	X	□	?	?
Hydrofluoric acid, 50%	—	—	—	□	?	?
Perchloric acid, 25%	—	X	X	□	?	?
Phosphoric acid, 25%	□	X	X	□	?	?
Phosphoric acid, 85%	X	X	X	□	?	?
Nitric acid, 25%	—	X	—	□	?	?
Nitric acid, 65%	—	—	—	□	?	?
Hydrochloric acid, 25%	—	X	—	□	?	?
Hydrochloric acid, 37%	—	—	—	□	?	?
Sulfuric acid, 25%	—	X	X	□	□	□
Sulfuric acid, 98%	—	—	—	□	?	?
Trichloroacetic acid, 25%	—	X	□	□	?	?
BASES	**CA**	**CN**	**RC**	**TF**	**GF**	**PC**
Ammonium, 1N	□	□	X	□	□	□
Ammonium hydroxide,25%	—	X	—	X	□	X
Potassium hydroxide, 32%	—	—	X	□	□	X
Sodium hydroxide, 32%	—	—	X	□	□	X
Sodium, 1N	X	—	X	□	□	□
AQUEOUS SOLUTIONS	**CA**	**CN**	**RC**	**TF**	**GF**	**PC**
Formalin, 30%	X	□	X	□	□	□
Sodium hypochlorite, 5%	□	X	□	□	□	?
Hydrogen peroxide, 35%	□	□	X	□	?	?

Key to symbols

□ = compatible
X = limited compatibility
— = not compatible
? = not tested

Contact time: 24 hours at 20ÅãC

Chemical compatibilities can be influenced by various factors.

Therefore, we recommend that you confirm compatibility with the liquid you wish to filter by performing a trial filtration run before you begin with actual filtration.

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3- and 6-branch CHM®FR manifold

CHM®FR manifolds allow independent usage of any one port with a stopcock. FR manifods are made of stainless steel and are available with 3 and 6 filtration funnels. (can be of 100 ml and 500 ml capacity). The stainless steel frits ensure homogeneous distribution of bacteria or particles retained on the filter surface.

Technical Specifications

Filtration area	12.5 cm²
Materials	Stainless steel manifold, funnels, lids, clamps, and filter supports. Silicone flat gaskets. Silicone sealing rings for lid, cap and hose nipple connnector
Membrane filter	50 mm diameter (or 47 mm, but for regular use of this diameter, replace the frits supplied with frits for 47 mm filters)
Sterilization	By autoclaving (121°C or 134°C) or dry heat (180°C). Sanitization with by flaming

Order Information

FR3x100 3-branch manifold system with 100 ml funnels
FR6x100 6-branch manifold system with 100 ml funnels
FR3x500 3-branch manifold system with 500 ml funnels
FR6x500 6-branch manifold system with 500 ml funnels

Order Information Vacuum pumps

Order Nbr.	Pump Head	Diaphragm	Valves
VP022AN18	Aluminium	CR	Stainless Steel
VP022AT18	Aluminium	PTFE-coated	Stainless Steel
VP086KN18	PPS	EPDM	FPM
VP086KT18	PPS	PTFE-coated	FFPM

Filters Vacuum holders

CHM®VF This versatile vacuum filter holder is available in two versions, with a glass frit filter support (ensures uniform distribution of retained particles on the filter surface and is therefore recommended for colony counting and for collection of suspended solids), or with an easy-to-clean PTFE-coated stainless screen support (preferable when the filtrate is required, e.g. for particle removing or sterilizing filtration, and for particle collection from viscous liquids such as oils.

Order Information

FS047300T Glass Filtration System for 47mm (or 50mm) membranes with stopper
FS047300S Glass Filtration System for 47mm (or 50mm) membranes without stopper

Re-usable CHM® syringe filter holders (up to about 100ml) Stainless Steel HIN and Polycarbonate HPC

CHM® HIN inox holder for solvents and chemicals. The PTFE-coated surface on the top part is an important property of the filter holder and ensures leak proof sealing without a sealing ring. As a result, the heat-resistance is extremely good, and the chemical compatibility depends only on the inserted filter type.

The top part can easily be mounted on the bottom part using the tightening tool supplied. Filter supports in the top and bottom bottom parts allow filtration in either direction.

CHM® HPC - Polycarbonate Holder for aqueous solutions This inexpensive filter holder is made of clear, autoclavable polycarbonate. The silicone gasket enables a leak free filtration at pressures of up to 7 bar simply by manually screwing together. Filter supports in the top and bottom parts allow filtration in either direction.

Order Information

CHM® HIN 25mm
HIN025001 (pack of 1 unit)

CHM® HPC 25mm
HPC025012 (pack of 12)

Technical Specifications *for the 25 mm Polycarbonate HPC Filter Holder*

Connectors female luer lock inlet, luer slip outlet
Chemical compatibility as for polycarbonate and silicone
Flow rate for water at Δp = 1 bar (100 kPa), ca. 70 ml/min with 0.2 µm membrane filter, ca. 110 ml/min with 0.45 µm membrane filter
Filtration area 3 cm^2
Materials polycarbonate top and bottom parts, silicone gasket 20.5 x 26.5 mm
Max. operating pressure 7 bar (700 kPa)
Membrane filter diameter 25 mm Sterilization by autoclaving at 121°C Hold-up volume less than 0.3 ml after overcoming the bubble point (0.6 ml before)

Technical Specifications *for the 25 mm Stainless Steel HIN Filter Holder*

Connectors female luer lock inlet, luer slip outlet (the 0.45 µm unit is also available with a male luer slip outlet)
Chemical compatibility as for stainless steel and PTFE Flow rate for water at Δp = 1 bar (100 kPa), ca. 45 ml/min with 0.2 µm Membrane filter ca. 80 ml/min with 0.45 µm Membrane filter
Filtration area 3 cm^2
Materials stainless steel (materials no. 1.4305) top and bottom parts. PTFE-coated sealing area in top part. Luran
Max. operating pressure 7 bar (700 kPa)
Membrane filter diameter 25 mm
Sterilization by autoclaving (max. 134°C) or by dry heat (max. 180°C)
Hold-up volume less than 0.1 ml after overcoming the bubble point (0.3 ml before)

Re-usable CHM® syringe filter holders (up to about 10ml) Polycarbonate HPC and Teflon HTF

CHM® HTF - PTFE Holder for solvents and chemicals. Made completely of PTFE, this holder is unaffected by chemicals and contains no trace elements which could be released into the liquid being filtered.

It is therefore extremely well suited for particle removal from samples and reagents for analytical methods, such as NMR samples. Another benefit in this application is the low hold-up volume, the ease of cleaning and ability to dry at a temperature of 180°C.
The construction of the holder ensures leak proof sealing without a sealing ring, and avoids twisting of the membrane filter when the top is tightened onto the base.

CHM® HPC - Polycarbonate Holder for aqueous solutions

This inexpensive filter holder is made of clear, autoclavable polycarbonate and contains a silicone gasket for leak proof sealing. It can be used at pressures of up to 7 bar, simply by manually screwing together.
Filter supports in the top and bottom parts allow filtration in either direction.

Technical Specifications

for the 13 mm Polycarbonate HPC filter holder

Connectors female luer lock inlet, luer slip outlet
Chemical compatibility as for polycarbonate and silicone
Flow rate for water at Δp = 1 bar (100 kPa), ca. 18 ml/min with 0.2 µm membrane filter ca. 35 ml/min with 0.45 µm membrane filter
Filtration area 0.5 cm^2
Materials polycarbonate top and bottom part, silicone gasket 10 x 14.9 mm
Max. operating pressure 7 bar (700 kPa)
Membrane filter diameter 13 mm
Sterilization by autoclaving at 121°C
Hold-up volume less than 0.2 ml after overcoming the bubble point (0.3 ml before)

Order Information

CHM® HTF-PTFE Holder
HTF013001 (pack of 1 unit)

CHM® HPC-Polycarbonate Holder
HPC013012 (pack of 12)

Technical Specifications

for the 13 mm PTFE HTF filter holder

Connectors female luer lock inlet, luer slip outlet
Chemical compatibility as for PTFE
Flow rate for water at Δp = 1 bar (100 kPa), a) with 0.2 µm membrane filter, ca. 10 ml/min b) with 0.45 µm membrane filter ca. 18 ml/min
Max. operating pressure, 5 bar (500 kPa)
Membrane filter diameter 13 mm
Sterilization by autoclaving (max. 134°C) or by dry heat (max. 180°C)
Hold-up volume less than 0.03 ml after overcoming the bubble point (0.3 ml before)

6 CHROMATOGRAPHY

TLC chambers

TLC Plates

TLC Sheets

HPLC Columns

CHM® TLC Chambers

TLC (Thin Layer Chromatography) is like all chromatographic techniques, based on a multistage distribution process. This process involves a suitable adsorvent (the stationary phase), solvents or solvent mixtures (the mobile phase), and the sample molecules. For Thin Layer Chromatography the adsorvent is coated as a thin layer onto a suitable support (e.g. glass plate, polyester or aluminium sheet). On this layer the substance mixture is separated by elution with a suitable solvent.

The most frequently used separation technique is ascending TLC in a glass chamber (standard method, linear development). Usually is applied as single development. However multiple development, with or without change of mobile phase can improve separation results.

For these reason, CHEMITON, S.L. is offering a wide range of glass tanks as well as plates and sheets.

CHM TLC Developing Chambers (Tanks)

Are manufactured from sturdy molded glass bricks that will withstand regular use for many years. The clear sides allow unobstructed visual inspection of TLC plates up to 20 x 20 cm in size. The top of the tanks has been ground to a uniform flatness for perfect lid and the edges have been beveled to remove any sharp edges. The bottoms are ground to provide a flat, level surface. A raised ridge along the inside bottom allows the simultaneous development of five 20 x 20 cm (ref. TT2020M)

TT2020S

Body manufactured in templed glass, with a flat base and smooth, polished upper edges. Lid with handle, with smooth and polished base, forming a perfectly airtight closure with the body of the tank.

Order Information

Product Code	Internal Size (mm)	Description	Plate Qty	Quantity /Box
TT2020S	200x200	Rectangular TLC Tank with lid for 200 x 200mm Plates	1	1
TT2020M	200x200	Rectangular TLC Tank with lid for 200 x 200mm Plates	5	1
TT1010S	100x100	Rectangular TLC Tank with lid for 100 x 100mm Plates		1
TT2010S	200x100	Cylindrical TLC Tank with lid for 200 x 100mm Plates	1	1
TSDEV		Complete Spray Device. (Headpiece, container for reagent and propellent gas (contains no CFC's)		1
TSCAP		Plastic headpiece for the TSDEV		1
TSGAS		Propellent gas for TSDEV		12
TSCON		Plastic Container for TSDEV		12

TT2020M

Is a thick-walled clear glass tank grooved to accept up to five 200x200 mm TLC plates. Grooves are at either end, and plated fit vertically into them. This tank is particulary used for quantitative analysis, serving also to store plates in a protected environment.

TT1010S

Its features are similar to those TT2020S tank, but it is used for 100x100 mm plates.

TT2010S

Body manufactured in templed glass, cylindrically blown with a flat base. Hat type lid. Should be used for 200x100 mm plates. Paper chromatography work may also be performed.

TSDEV

Complete Spray Device comprosing (Headpiece, container for reagent and propellent gas (contains no CFC's)

TSGAS

Propellent gas for TSDEV (contains no CFC's) 12 units.

TLC Tanks

T _ _ _ _ _ _

one digit
S Single (hold 1 plate)
M Multiple (hold 5 plates)

three to four digits
_ _ _ _ Length x Width

for the spray products
DEV Complete Spray Device
CAP Headpiece
GAS Propellent gas
CON Plastic Container

one digit
T Tank
S Spray

one digit
T TLC products

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CHM®TLC Plates

The CHM TLC glass plates and precoated sheets meet The following criteria: homogeneous coating, homogeneous thickness of layer, high packing density, firmly adherent layers and consistent chromatographic properties. The standard silica coating is one of the most frequently used ready-to-use layers for TLC. For these plates we use silica 60 with a mean pore diameter of 60 Å, a specific surface (BET) of about 500 m 2 /g, a specific pore volume of 0.75 ml/g and a particle size of 5 to 17 µm.

As fluorescent indicators we use manganese activated zinc silicate for short-wave UV light (254 nm) and a special inorganic fluorescent pigment for long wave UV light (366 nm). As binder highly polymeric products are used, which are stable in almost all organic solvents and resistant towards aggressive visualisation reagents. The binder systems used for our Polyester precoated sheets are also completely stable in purely aqueous eluents.

TLC Plates

T _ _ _ _ _ _

one digit	
F	Fluorescent Indicator UV254
_	NO Fluorescent Indicator UV254
two digits	
GS	Glass+Silicagel
PS	Polyester+Silicagel
AS	Aluminium+Silicagel
four digits	
_ _ _ _	Length x Width
one digit	
P	Plate
one digit	
T	TLC products

Order Information

Product Code	Description	Plate Size (cm)	Thickness	Fluorescent Indicator UV254	Qty/Pack
TP1020GS	Glass TLC silica 60	10 x 20	0,25 mm		50
TP2020GS	Glass TLC silica 60	20 x 20	0,25 mm		25
TP1020GSF	Glass TLC silica 60	10 x 20	0,25 mm	Yes	50
TP2020GSF	Glass TLC silica 60	20 x 20	0,25 mm	Yes	25
TP2020PS	Polyester TLC with silica 60	20 x 20	0,20 mm		25
TP4020PS	Polyester TLC with silica 60	40 x 20	0,20 mm		25
TP2020PSF	Polyester TLC with silica 60	20 x 20	0,20 mm	Yes	25
TP4020PSF	Polyester TLC with silica 60	40 x 20	0,20 mm	Yes	25
TP1020AS	Aluminium TLC with silica 60	10 x 20	0,20 mm		20
TP2020AS	Aluminium TLC with silica 60	20 x 20	0,20 mm		25
TP1020ASF	Aluminium TLC with silica 60	10 x 20	0,20 mm	Yes	20
TP2020ASF	Aluminium TLC with silica 60	20 x 20	0,20 mm	Yes	25

CHM®TLC Sheets

CHEMITON offers a complete line of high quality papers for chromatography, electrophoresis and transfer to be used in chromatography application techniques and gel transfer applications

CHM chromatography papers are manufactured with cotton linters with a high content of cellulose alpha of around 95%. The most important features in chromatography papers are their basis weight, thickness and capillary absorption. High weight and thickness of the paper allow a greater load of solutes, obtaining better resolutions in papers with low capillary absorption levels. The applications are very broad, particularly in the biochemistry and organic chemistry field. In the inorganic analysis, its most interesting application consists of the separation and identification of ions of very similar properties and those difficult to separate by classic methods, such as the separation of the positive ions of the platinum, beryl, aluminium, lanthanide, alkaline-ferrous groups…

GRADE C3001
The world standard paper for chromatography. One of the thinnest papers, with medium flow rate which provides optimum resolution. Smooth surface. Suitable for general analytical separations.

GRADE C3002
Thin paper with a flow rate slower than C3001, for higher resolution applications. Smooth surface. Particularly recommended for optical or radiometric scanning.

GRADE C3003
This medium thickness paper are normaly recommended for general applications with medium-heavy solute loadings. Gives compact spot. Frequently used for separation of inorganics and for electrophoresis

GRADE C3003M
Relatively thick paper with medium wet strength. Smooth surface. Used extensively for both electrophoresis and for general chromatography. Most widely used blotting paper. After C3001, the most widely used chromatography paper grade.

GRADE C3004
This relatively thin paper with a flow rate faster than C3001 is recommended for the most common chromatography tests when loadings are relatively low. It is also adequated when speed is an important factor and quality control general applications where high resolution is not required.

GRADE C3017
This paper is one of the thickness of this CHM line which converts C3017 a suitable paper for heavy loadings. Offers a very high flow rate and is highly absorvent. Suitable for preparative paper chromatography and electrophoresis.

GRADE C3031
This paper of a medium thickness offers an extremely high flow rate and it is recommended for electrophoresis of large molecules. CHM C3031 has a soft surface and uniform.

CHM®HPLC Columns

Chemiton HPLC Columns are designed and manufactured to offer excellent and reproducible performance for the benign to the most difficult types of samples. Chemiton makes available a standard selection of Kromasil, Nucleosil and LiChrospher column configurations for your analytical and preparative needs. They are specifically designed for compatibility with all HPLC instrumentation.

Kromasil

Kromasil is a spherical, totally porous silica-based chromatographic packing material. The combination of high resolution, high loadability and mechanical stability makes Kromasil an ideal choice of packing material for both analytical and preparative HPLC. In addition to the native silica, Kromasil is available in C8 and C18 bonded phases.

Kromasil Specifications

Surface area	340 – 550 m^2/g
Particle size	3.5 – 10 um
Pore volume	0.9- 1.2 ml/g
Pore diameter	100Å - 60Å

Kromasil Properties

- purity (low metal content Na, Al, Fe)
- chemically inert (free silanols content)
- stability to PH (1.5 to 9,5)
- attenuates the peak tailing
- no need of ion pair reagent (mostly)

Nucleosil

Nucleosil is a silica based totally porous spherical packing medium with a particularly narrow pore size distribution
It is available with 100Å - 120Å pore diameters, resulting in surface areas from 200m^2/g to 350m^2/g. Nucleosil exhibits a high degree of mechanical stability and easily copes with the high pressures involved in HPLC. Nucleosil is available in particle diameters of three, five, seven and ten micron.

Nucleosil Specifications

Particle Diameters	3, 5, 7 and 10um
Pore sizes	100Å, 120Å
Pore volume	0.65-1.0 ml/g
Surface area	350 - 200m^2/g

LiChrospher Reversed-Phase HPLC Columns

Applications: Pharmaceuticals, aromatics
Availability: 5um particle size
Available Stationary Phases: RP-18, RP-8
LiChrospher silica columns are made with spherical, `sil' type porous silica particles.
LiChrospher 100Å is offered in both RP-8 and RP-18. These columns are noted for high sample capacity and efficiency.

LiChrospher RP-18:
Spherical silica for acidic, neutral and basic compounds
Great batch-to-batch reproducibility

LiChrospher Normal-Phase HPLC Columns

For normal phase chromatography, Chemiton supplies polar modified silica gel phases LiChrospher NH2 as convenient columns.
Available Stationary Phases: NH2

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HPLC Columns

	Carbon Load %	End Capping	Particle Size µm	Specific Surface Area m²/g	Pore Volume ml/g	Pore Size Å	pH stability	USP (*) equivalence
KROMASIL 100								
KROMASIL 100 5 C8	12	YES	5	340	0,9	100	1.5 - 9.5	L7
KROMASIL 100 10 C8	12	YES	10	340	0,9	100	1.5 - 9.5	L7
KROMASIL 100 3.5 C18	19	YES	3,5	340	0,9	100	1.5 - 9.5	L1
KROMASIL 100 5 C18	19	YES	5	340	0,9	100	1.5 - 9.5	L1
KROMASIL 100 10 C18	15	YES	10	340	0,9	100	1.5 - 9.5	L1
KROMASIL 100 5 NH2	3,5	YES	5	340	0,9	100	1.5 - 9.5	L18
KROMASIL 100 5 SIL			5	340	0,9		1.5 - 9.5	L3
KROMASIL 60								
KROMASIL 60 5 CN	12		5	550	1,2	60	1.5 - 9.5	L10
KROMASIL 60 5 SIL			5	550	1,1	60	1.5 - 9.5	L3
NUCLEOSIL 100								
NUCLEOSIL 100 5 C8	8,8	NON	5 ±1.5	350	1	100	1 - 9	L7
NUCLEOSIL 100 10 C8	8,5	NON	10 ±1.5	350	1	100	1 - 9	L7
NUCLEOSIL 100 3 C18	15	YES	3 -4	350	1	100	1 - 9	L1
NUCLEOSIL 100 5 C18	15	YES	5 ±1.5	350	1	100	1 - 9	L1
NUCLEOSIL 100 7 C18	15	YES	7 ±1.5	350	1	100	1 - 9	L1
NUCLEOSIL 100 10 C18	15	YES	10 ±1.5	350	1	100	1 - 9	L1
NUCLEOSIL 100 5 NH2	3,5		5 ±1.5	350	1	100	1 - 9	L18
NUCLEOSIL 100 5 CN	5		5 ±1.5	350	1	100	1 - 9	L10
NUCLEOSIL 100 5 SIL			5 ±1.5	200	1		1 - 9	L3
NUCLEOSIL 120								
NUCLEOSIL 120 3 C8	6,5	NON	3 - 4	200	0,65	120	1 - 9	L7
NUCLEOSIL 120 5 C8	6,5	NON	5 ±1.5	200	0,65	120	1 - 9	L7
NUCLEOSIL 120 10 C8	11	NON	10 ±1.5	200	0,65	120	1 - 9	L7
NUCLEOSIL 120 3 C18	11	YES	3 - 4	200	0,65	120	1 - 9	L1
NUCLEOSIL 120 5 C18	11	YES	5 ±1.5	200	0,65	120	1 - 9	L1
NUCLEOSIL 120 7 C18	11	YES	7 ±1.5	200	0,65	120	1 - 9	L1
NUCLEOSIL 120 10 C18	11	YES	10 ±1.5	200	0,65	120	1 - 9	L1
NUCLEOSIL 120 5 SIL			5 ±1.5	200	0,65	120	1 - 9	L3
LICHROSPHER 100								
LICHROSPHER 100 5 RP8	12,5	YES	5	350	1,25	100		L7
LICHROSPHER 100 5 RP18	21	YES	5	350	1,25	100		L1
LICHROSPHER 100 5 NH2	4,6		5	350	1,25	100		L18

(*) The US Pharmacopeia (USP) is a standard source for many pharmaceutical methods. Listed below are the recommended CHM® HPLC column L-numbers.