

Mixed Cellulose Esters (MCE)

- **Composition:** Mixed cellulose esters including cellulose nitrate and cellulose acetate, also known as nitrocellulose
- **High porosity** provides superior flow rates
- **High protein binding** can be blocked by pretreatment or utilized in applications
- **High purity:** Triton-free
- **Autoclavable:** Withstands autoclaving temperatures up to 130°C without adversely affecting bubble point, flow rate or microbiological recovery
- **Rapid wetting time:** <3 seconds to wet a 47 mm diameter disc with aqueous 1% methylene blue

APPLICATIONS

- Standard membranes for many laboratory applications including filter sterilizing biological fluids, microbiology, contamination analysis and air monitoring
- Can be transparentized to view collected particles
 - using compatible liquid (immersion oil, toluene),
- OR
 - select Opticlear membranes for the “hot block” acetone vapor method
- Gridded filters available for quantifying microbial growth
- Available non-sterile or sterilized by ethylene oxide (EtO)

SPECIFICATIONS FOR MIXED CELLULOSE ESTERS (MCE), CODE A

Pore Size µm	Color	Surface	Bubble Point ¹		Flow Rate ²		Porosity ³ (%)	Thickness (µm)
			MPa	psi	Water (mL/min/cm ²)	Air (L/min/cm ²)		
0.10	White	Plain	≥0.24	≥35.3	2.7	0.67	65	110
0.20	White	Plain	≥0.37	≥54.5	17.5	2.4	73	133
0.30	White	Plain	≥0.28	≥41.2	30	3.7	75	140
0.45	White	Plain	≥0.24	≥35.0	45	5.0	78	145
0.45	White	Grid	≥0.16	≥24.2	80	8.0	79	142
0.65	White	Plain	≥0.14	≥21.3	120	11.2	79	150
0.80	White	Plain	≥0.11	≥16.4	165	15.0	80	150
1.00	White	Plain	≥0.096	≥13.9	220	20.4	80	150
3.00	White	Plain	≥0.070	≥10.2	300	28.3	81	155
5.00	White	Plain	≥0.058	≥8.5	400	40.9	81	160
0.45	Black	Grid	≥0.22	≥32.7	50	5.0	78	135
0.80	Black	Grid	≥0.10	≥14.9	170	15	80	145
0.45	Green	Grid	≥0.22	≥32.7	50	5.0	78	135
0.80	Green	Grid	≥0.10	≥14.9	170	15	80	145

- Refractive index = 1.50
- Maximum operating temperature = 130°C
- Ash Content 2 ~ 5 µg/cm²

Definitions:

1. Bubble point is the minimum pressure required to force air through a membrane which has been prewet with water (0.1 µm membranes prewet with isopropanol)
2. Flow Rate indicates initial flow rate at 10 psi using a KGS 47 filter holder
 - Water: using water prefiltered to 0.1 µm pore size
 - Air: using prefiltered nitrogen at 10 psi
3. Porosity refers to the percent open area

Protein Binding of Membrane Filters

Membrane	Catalog code	Protein Absorbed (µg/cm ²) At pH 7.0	
		BSA*	γ-globulin
Mixed Cellulose Esters, 0.20 µm	A020...	100.8	206.2
Cellulose Acetate, 0.20 µm	C020...	26.8	24.3

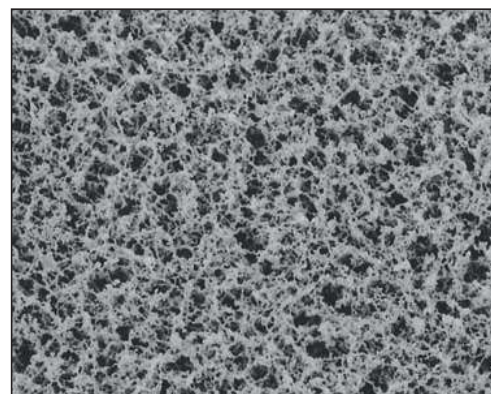
*Bovine Serum Albumin

Metal Content of White Plain MCE Membrane Filters (ppm)

Al	<2.0	K	6.0	Ni	<5.0
Ca	140.0	Li	<1.0	Pb	<1.0
Cd	<0.5	Mg	10.0	Si	<20.0
Cr	8.0	Mn	<0.5	Sn	<5.0
Cu	<1.0	Mo	<1.0	Ti	<1.0
Fe	<5.0	Na	10.0	Zn	<1.0

ORDERING INFORMATION: MIXED CELLULOSE ESTERS – NON-STERILE**Plain White, package of 100 discs**

Pore Size (µm)	Diameter			
	13 mm	25 mm	37mm	47 mm
0.10	A010A013A	A010A025A	A010A037A	A010A047A
0.20	A020A013A	A020A025A	A020A037A	A020A047A
0.30	A030A013A	A030A025A	A030A037A	A030A047A
0.45	A045A013A	A045A025A	A045A037A	A045A047A
0.65	A065A013A	A065A025A	A065A037A	A065A047A
0.80	A080A013A	A080A025A	A080A037A	A080A047A
1.00	A100A013A	A100A025A	A100A037A	A100A047A
3.00	A300A013A	A300A025A	A300A037A	A300A047A
5.00	A500A013A	A500A025A	A500A037A	A500A047A



Mixed Cellulose Esters

Plain White, package of 25 discs

Pore Size (µm)	Diameter		
	90 mm	142 mm	293 mm
0.10	A010A090C	A010A142C	A010A293C
0.20	A020A090C	A020A142C	A020A293C
0.30	A030A090C	A030A142C	A030A293C
0.45	A045A090C	A045A142C	A045A293C
0.65	A065A090C	A065A142C	A065A293C
0.80	A080A090C	A080A142C	A080A293C
1.00	A100A090C	A100A142C	A100A293C
3.00	A300A090C	A300A142C	A300A293C
5.00	A500A090C	A500A142C	A500A293C

ORDERING INFORMATION (CONTINUED): MIXED CELLULOSE ESTERS – NON-STERILE**Gridded White, package of 100 discs**

Pore Size (µm)	Diameter			
	13 mm	25 mm	37 mm	47 mm
0.45	A045B013A	A045B025A	A045B037A	A045B047A
0.80	A080B013A	A080B025A	A080B037A	A080B047A

0.8 µm MF has green grid lines on white background, 0.45 µm has black grid lines.

Sheets, Gridded White

Pore Size (µm)	Qty/pkg	Size
		300 mm x 300 mm
0.45	25	A045B304C

Hydrophobic Edge, 47 mm discs, package of 100 discs

Pore Size (µm)	Surface	
	Plain	Grid
0.20	A020J047A	A020K047A
0.45	A045J047A	A045K047A

Opticlear, package of 100 discs

Pore Size (µm)	Surface	Diameter		
		25 mm	37 mm	47 mm
0.80	Plain	A080X025A	A080X037A	A080X047A
	Grid	A080X025B	A080X037B	A080X047B

Black, package of 100 discs

Pore Size (µm)	Surface	Diameter			
		13 mm	25 mm	37 mm	47 mm
0.45	Plain	A045N013A	A045N025A	A045N037A	A045N047A
0.45	Grid	A045P013A	A045P025A	A045P037A	A045P047A
0.80	Plain	A080N013A	A080N025A	-	A080N047A
0.80	Grid	A080P013A	A080P025A	-	A080P047A

Green, package of 100 discs

Pore Size (µm)	Surface	Diameter		
		13 mm	25 mm	47 mm
0.45	Plain	A045U013A	A045U025A	A045U047A
0.45	Grid	A045V013A	A045V025A	A045V047A
0.80	Grid	-	-	A080V047A

Additional sizes available by special order.

Also available in:

- Sterile packaging for microbiology.
- Disposable syringe units.

For Pure Nitrocellulose for Blotting, see page 38.

MSDS available for all the products.



MCE membrane filters