

Overview of Elements

Wire Mesh Element

- Corrosion protection due to stainless steel filter material and tin-plated or nickel-plated steel parts
- Cleanable
- Filtration ratings: 25µm, 50µm, 74µm, 100µm, 149µm, and 200µm nominal

Metal Fiber Element

- Safeguards high filtration efficiency even at extreme dynamic loads
- High contamination retention capacity due to deep filtering which results in a longer service life
- Low flow resistance
- Corrosion protection due to stainless steel filter material and tin-plated steel parts
- High differential pressure tolerance
- Economical due to cleanability
- High temperature range
- Filtration ratings: 3µm, 5µm, 10µm, and 20µm nominal / or absolute ratings - Consult Factory

Disposable Polyester Element

- Higher contamination retention capacity than cellulose due to deep filtration
- Low flow resistance
- Media supported on both sides with wire mesh
- Good fluid compatibility due to media being free of bonding agent
- Filtration ratings: 10µm, and 20µm nominal
- Non cellulose media (*polyester*) - plastic coating eliminates swelling

Mobilemicron Element

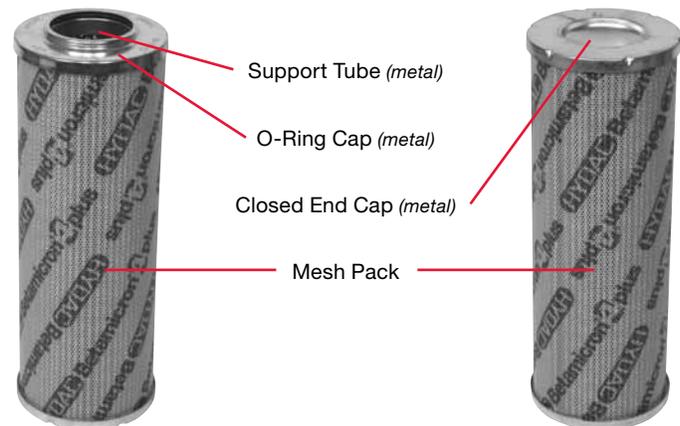
- Extremely low ΔP across elements when utilized with high viscosity fluids or cold start conditions
- Melt blown fiberglass media construction
- Good dirt holding capacity
- High filtration efficiencies $\beta_{x(c)} \geq 200$
- Good beta stability
- Filtration Ratings: 10µm and 15µm absolute

Element Construction

Betamicon®

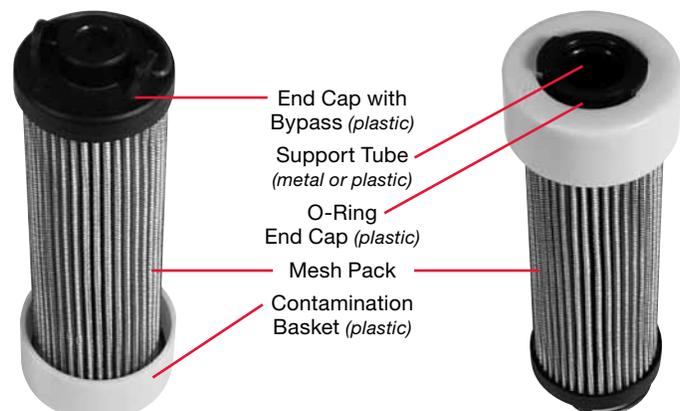


Betamicon® Pressure



Betamicon® Return Element

Return filters include Bypass in the endcap - insures proper bypass operation at all times.



Betamicon® Elements

- BN4HC - Low Collapse (290 psid)
- BH4HC - High Collapse (3045 psid)] - code designation
- Fiberglass
- 3, 5, 10, & 20 micron
- Filtration Rating $\beta_{x(c)} \geq 1000$
- Structurally Designed for Dynamic Flow Conditions
- Depth Filtration
- Disposable



Betamicon / Aquamicon Combination Elements

- BN/AM - code designation
- Collapse Rating - 145 psid
- Undissolved (free) Water Removal ONLY!
- 3 & 10 micron
- Filtration Rating $\beta_{x(c)} > 100$
- Disposable



Mobilemicron Elements

- MM - code designation
- Melt blown
- Low Clean Element ΔP Per Flow Rate for Cold Start
- Filtration Rating $\beta_{x(c)} \geq 200$
- Good Beta Stability
- Good Dirt Holding Capacity
- Collapse Rating - 145 psid
- Depth Filtration
- Disposable



Polyester Elements

- P/HC - code designation
- Polyester
- Collapse Rating - 145 psid
- 10 & 20 micron
- Surface Filtration
- Disposable



ECOMICRON® Element

- ECO/N - code designation
- Fiberglass
- All Plastic Construction
- Collapse Rating - 145 psid
- 3, 5, 10, & 20 micron
- Filtration Rating $\beta_{x(c)} \geq 1000$
- Depth Filtration
- Disposable



Wire Screen Elements

- W/HC - code designation
- Wire Mesh
- Collapse Rating - 290 psid
- 25, 74, & 149 micron
- Surface Filtration
- Cleanable



Aquamicon® Elements

- AM - code designation
- Collapse Rating - 145 psid
- Undissolved (free) Water Removal ONLY!
- 40 micron
- Filtration Rating $\beta_{40(c)} \geq 100$
- Disposable

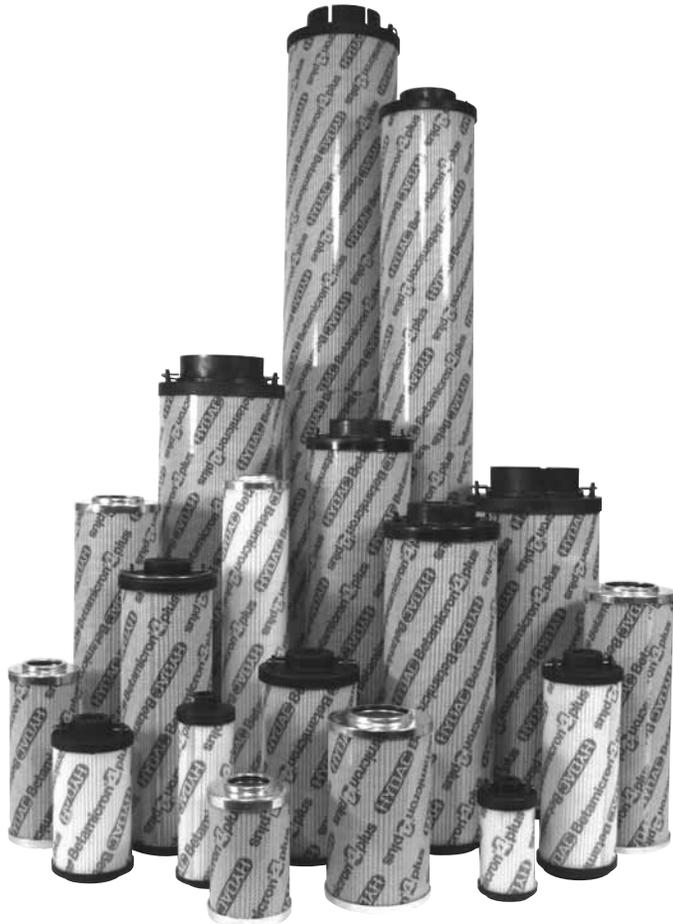


Metal Fiber Elements

- V - code designation
- Stainless Steel Media
- Collapse Rating - 3045 psid
- 5, 10, & 20 micron
- High Efficiency Rated available on request
- 1, 3, 5, 10, & 20 micron
- Depth Filtration
- Cleanable



Betamicron® Series High Pressure and Return Filter Elements



Optimized Two/Three Layer Filter Mesh Pack Structure with NEW Glass Fibers

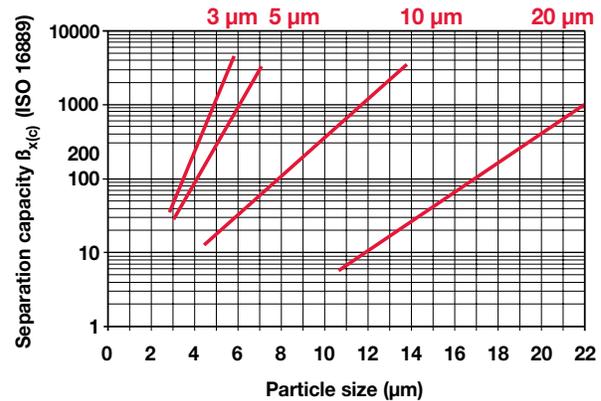
New filter medias were developed for the new Betamicron®4 filter elements. Due to the two or three stage filter media structures, highest contamination retention, highest Beta efficiencies and stability, and favorable $\Delta p/Q$ characteristics are achieved.



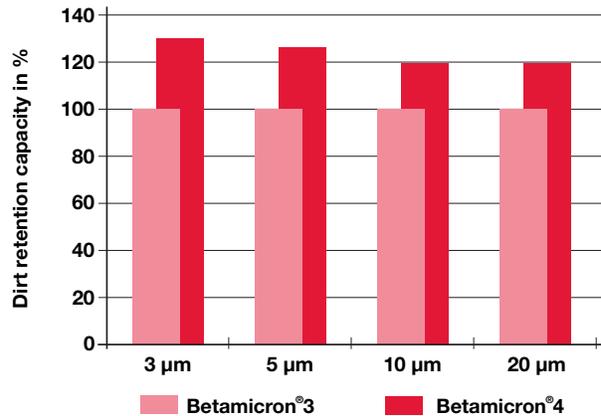
Longer element service life and energy cost savings due to particularly low pressure losses across the element



Better component protection and longer system service life due to improved Beta efficiency (with filter ratings 3 and 5 μm)



Longer element service life and lower operating costs due to increase in the contamination retention capacity by up to 30% globally



Good. Better. Best Betamicron®4.

With the previous Betamicron®3 technology you were always on the leading edge of element performance:

High levels of fluid cleanliness over the long term for hydraulic and lubrication systems have always been achieved by Betamicron®3.

The new generation Betamicron®4 leaps ahead in system performance:

Excellent performance data resulting in reduced Life Cycle Cost.

The Key Innovations of Generation 4 are

- Optimized mesh pack structure with newly developed filter media, support, and transition layers
- Improved performance data (optimized Beta efficiency, contamination retention, $\Delta p/Q$ characteristics, and Beta stability)
- Patented process for longitudinal seam bonding increases seam integrity
- Element plastic components have been made conductive to aid in static discharge
- Use of spiral lock seam support tubes lowers element weight
- Element outer wraps are made of plastic (polyester) to reduce environmental impact and improve fatigue resistance

Technical Data

- Collapse burst pressure
- Low pressure differential: 290 psid (17 bar) - BN4HC
- High pressure differential: 3045 psid (210 bar) - BH4HC
- Filter element ratings
- 3, 5, 10, 20 μm

Element Outer Wrap Protection

The star-shaped pleated filter mesh pack is enclosed by a stable outer wrap made of plastic (polyester). This outer wrap distributes the incoming fluid evenly over the mesh pack (diffusor). Moreover, the fluid does not flow directly through the mesh pack, since this outer wrap dampens the flow forces and protects the element from pulsating flows. This element has an extremely high flow fatigue strength. The mesh pack is naturally protected against mechanical damage, e.g. when elements are being installed. Outer wrap allows customer logos to be imprinted, and used as the advertising medium for OEMs, thus ensuring a higher percent capture of spare parts business. At the same time, the user can rely on the fact that he will always get a genuine spare part.



High operational reliability, because the sensitive filter mesh pack is protected against direct fluid flow forces and pulsations



Ease of handling, because the compact element is protected against damage in transit and during its installation



Protection against product piracy through “brand labeling”

Patented Longitudinal Seam Bonding Method

Due to an innovative bonding process of the longitudinal seam, a tight homogeneous integration of the open filter mesh pack ends is ensured, even in the case of varying loads. A particle transition from the dirt to the clean side is reliably prevented as well as down stream media migration.



High operational reliability, even under dynamic loads, due to tight longitudinal seam bonding.

Zinc Free Structure

To prevent the formation of zinc soap, which occurs mainly when water-containing fluids (HFA/HFC) and bio-oils are used and come in contact with zinc coated components, no zinc-containing components are employed.



High operational reliability, because elements cannot be blocked as a result of the formation of zinc soap



Savings in storage costs, because the filter elements can be used universally with all fluids.

Reduction of Life Cycle Costs Life Cycle Cost – what does this mean?

Today the term **Life Cycle Cost** is a dominating topic among suppliers, machine builders and end users.

Life Cycle Costs are the total costs of a system, machine or component from procurement through to its scrapping.

The reduction of Life Cycle Cost is one of the **mega trends** in mechanical engineering. The **objective** is to communicate the **total cost** reduction impacts on Life Cycle Costs.

This creates a better basis for the customer to make the best buying decision.

Large end users are setting this trend.

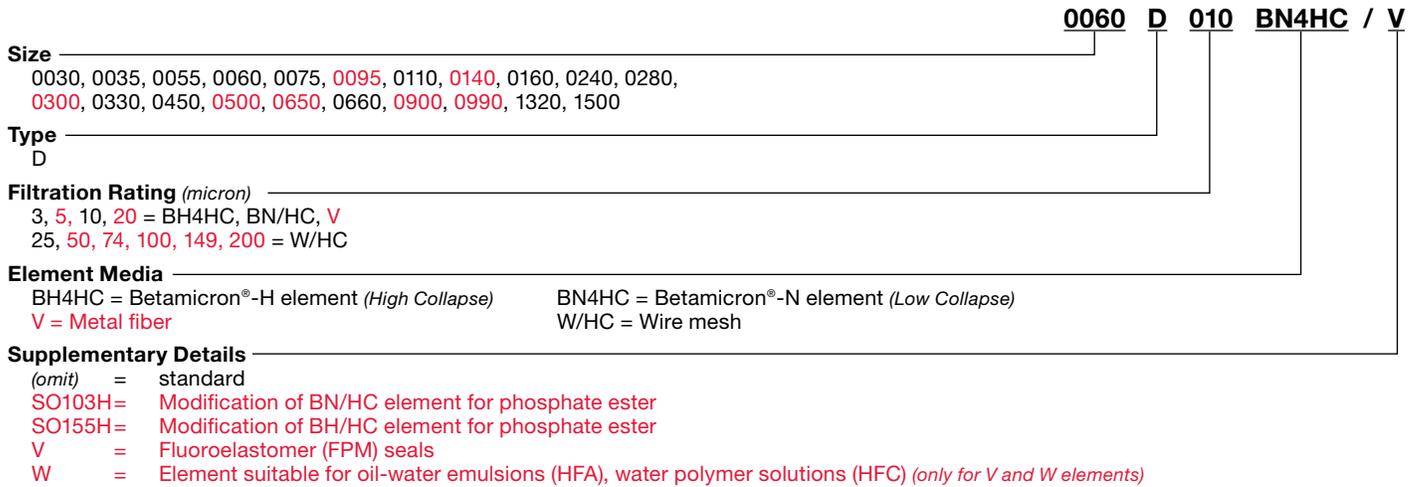
Leading car makers, for example, require truthful information about the Life Cycle Costs and derived variables – e.g. costs for machine tools over 10 years, for presses up to 30 years. Decisions on new investments by machine manufacturers are based on the machine price and the Life Cycle Cost calculations offered.

This changed and holistic understanding of cost by leading end customers naturally results in new challenges for machine manufacturers. System concepts, subsystems and components used must also stand the test with regard to their influence on the Life Cycle Cost.

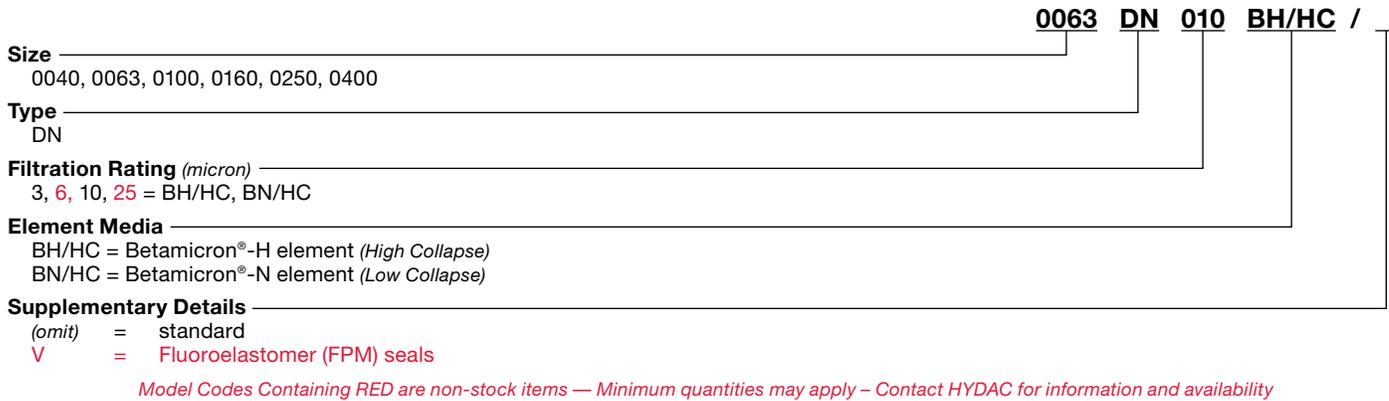
Betamicon®4 elements are the winners in the “Life Cycle Cost Contest”

Cost	Minimized					
	Optimized Mesh Pack Structure	Optimized Longitudinal Seam	Zinc-free Structure	Spiral Lock Seam Support Tubes	Protective Outer Wrap	Discharge Capability
Energy	•					
Personnel	•	•			•	•
Logistics			•	•		
Failure	•	•	•		•	•
Production	•	•				•
Repair	•	•	•		•	•
Maintenance	•	•	•		•	•
Spare Parts	•	•	•		•	•
Waste Disposal				•		

“D” Pressure Elements Model Code



“DN” Pressure Elements Model Code



Hydraulic Data

Permissible ΔP across element

- Betamicon®-H (BH/HC): 3045 psid (210 bar)
- Betamicon®-N (BN/HC): 290 psid (20 bar)
- Metal fiber (V): 3045 psid (210 bar)
- Wire mesh (W/HC): 290 psid (20 bar)

Temperature Range

- -22° to 250°F (-30° to 100°C) (*only possible with NBR seals*)

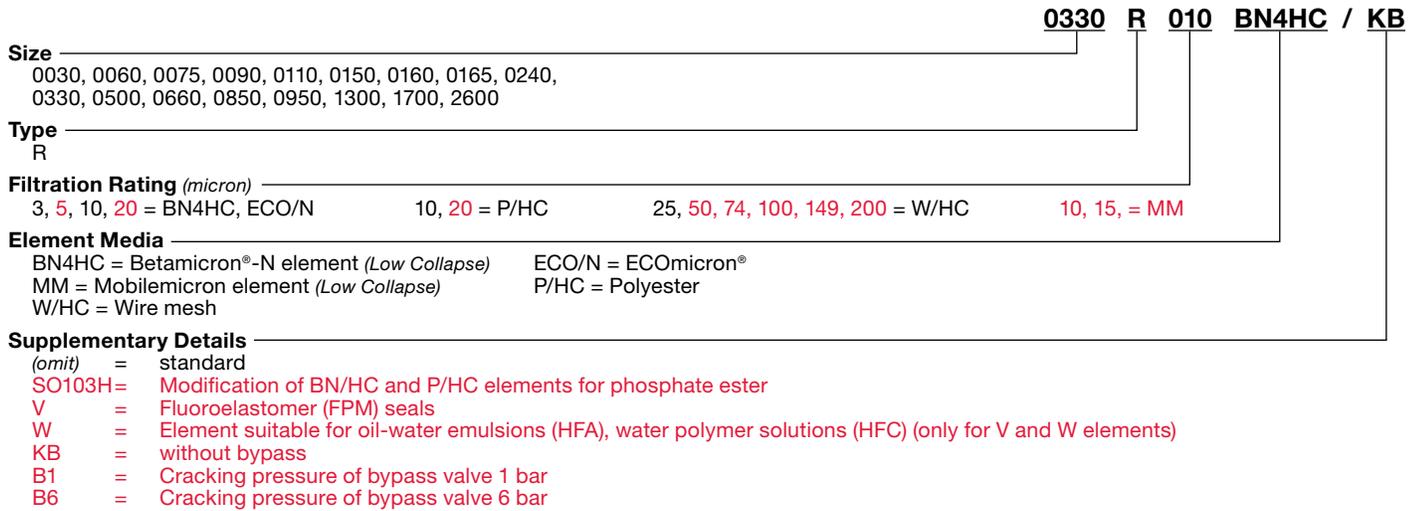
Compatibility with Hydraulic Media

- Suitable for use with mineral oils, lubrication oils, non-flammable fluids, synthetic and rapidly biodegradable oils. For use with water, please contact HYDAC

Flow Fatigue Stability to ISO 3724

- High fatigue resistance due to solid filter material supports on both sides and high inherent stability of filter elements

“R” Return Elements Model Code



“RN” Return Elements Model Code



“RK” RKM Elements Model Code



Hydraulic Data

Permissible ΔP across element

- Betamicon®-N (BN/HC): 290 psid (20 bar)
- Paper (P/HC): 145 psid (10 bar)
- Wire mesh (W/HC): 290 psid (20 bar)
- Betamicon®/Aquamicron® (BN/AM): 145 psid (10 bar)
- Aquamicron® (AM): 145 psid (10 bar)
- ECOMICRON® (ECO/N): 145 psid (10 bar)
- Mobilemicron (MM/RK): 145 psid (10 bar)

Temperature Range

- 22° to 250°F (-30° to 100°C) (only possible with NBR seals)

Compatibility with Hydraulic Media

- Suitable for use with mineral oils, lubrication oils, non-flammable fluids, synthetic and rapidly biodegradable oils. For use with water, please contact HYDAC

Flow Fatigue Stability to ISO 3724

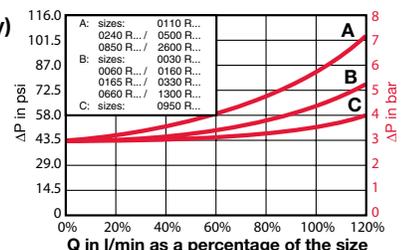
- High fatigue resistance due to solid filter media supports on upstream and downstream sides and high inherent stability of filter layers.

Cracking Pressure of Bypass Valve (..R.. only)

- $\Delta P = 3 \text{ bar} + 0.5 \text{ bar}$

Graphs of Bypass Valve (..R.. only)

- The bypass valve graphs apply to mineral oils with a density of 0.86 kg/dm³. The differential pressure of the valves changes proportionally to the density.



ECOmicon® Series Environmentally Compatible



Features

- All plastic construction
Note: Bypass valve contains a metal spring for efficient operation. The spring can be popped out if the element is crushed.
- Standard HYDAC elements sizes 1300R and 2600R with absolute ratings of 3 and 10 micron are available
- Light weight for ease of handling during shipment and maintenance
- 43 psi (3 bar) bypass valve setting
- 145 psi (10 bar) element collapse rating

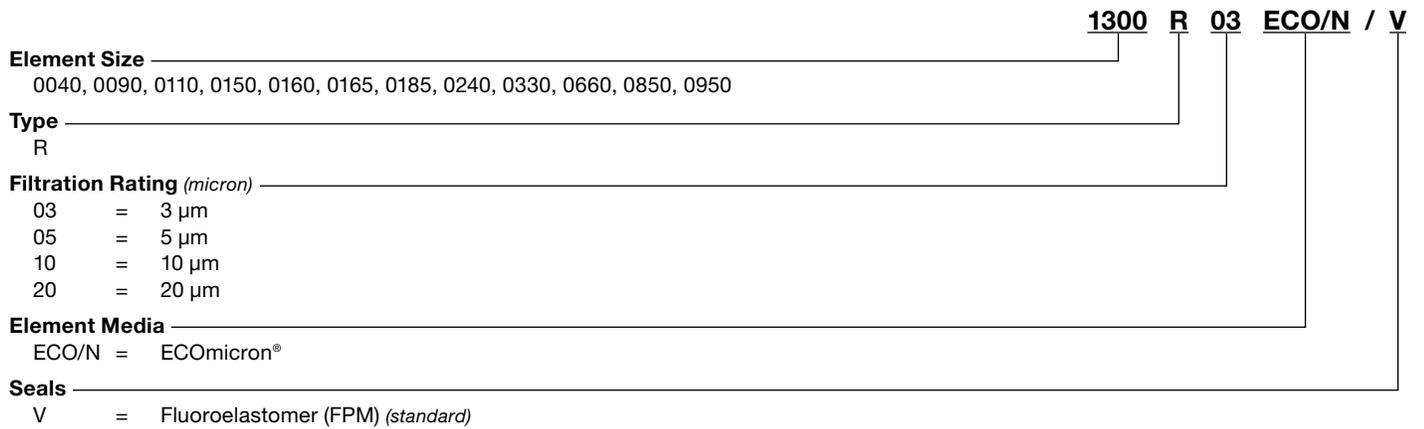
Benefits

- Compatible with most hydraulic and lubrication fluids. Please consult factory for synthetic fluid use.
- Compatible for water application use.
- Media seam welded with patented HYDAC ultra-sonic welding process, which prevents media migration.
- $B_{x(c)} \geq 1000$ absolute filtration rating

Technical Details

Temperature Range	-22° to 212°F (-30° to 100°C)
Flow fatigue stability to ISO 3724/76	High fatigue resistance due to solid filter material supports on both sides and high inherent stability of filter materials.
Cracking Pressure of Bypass Valve	$\Delta p_o = 43 \text{ psi} \pm 7 \text{ psi}$ (3 bar \pm 0.5 bar)

Model Code



Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

ECOMICRON® Construction

Bypass Valve with Metal Spring (can be easily removed when crushed)

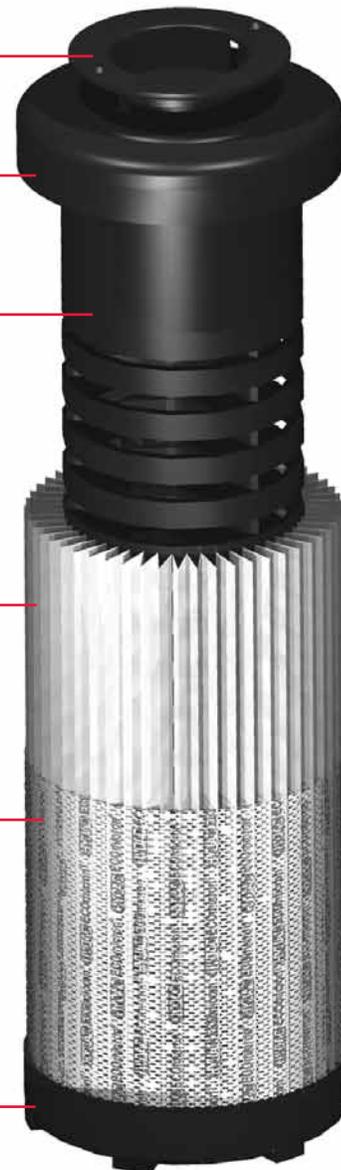
Plastic Endcap

Plastic Support Tube

Fiberglass Media

Plastic Outer Wrap

Plastic End Cap



Aquamicron® Series Water Removal Elements



Description

Aquamicron® filter elements are specially designed to separate free water from mineral oils. They are only supplied in the dimensions of HYDAC return line filter elements from size 330 and larger. This means that they can be installed in all HYDAC filter housings from size 330 which are fitted with return line filter elements.

The increasing pressure loss in a filter element which is being saturated with water indicates, by means of standard clogging indicators, that it is time to change the element. When the Aquamicron® technique is employed, particle contaminants are also separated from the hydraulic medium as a by-product. This means that the Aquamicron® element doubles as a safety filter.

In order to guarantee the greatest efficiency, it is recommended that these elements be installed in an off-line recirculation loop configuration.

Note: All Aquamicron® elements are disposable.

How Water Does Damage

The presence of water in hydraulic systems cause many problems. For example, the saturation of very fine filters or jamming of valves. These problems are often wrongly attributed to high levels of particle contamination. Added to this, the build-up of rust and the reduction in lubricating properties on bearings and slides can lead to considerable impairment in the effective functioning of a system. This goes to show that water, too, represents a serious "contaminant" in a hydraulic system.

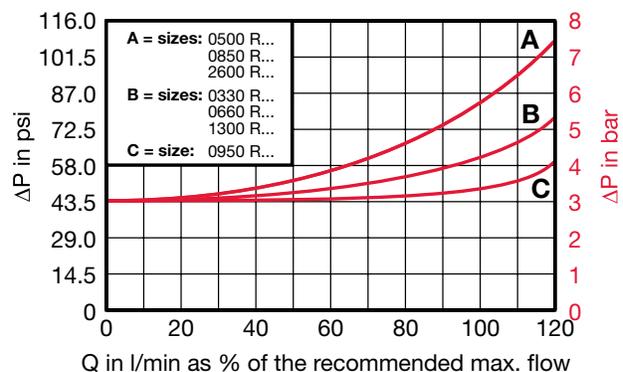
Previously, methods commonly used for extraction of water, have, on the whole, proven to be uneconomical in relation to the purchase price of a system. The HYDAC Aquamicron® technique offers an economically sound and yet an effective method of separating free water from hydraulic media.

Technical Details

Operating pressure	360 psi (25 bar)
Max permissible across element	145 psi (10 bar)
Temperature range	32° to 160°F (0° to 71°C)
Compatibility with hydraulic media	Mineral oils: Test criteria to ISO 2943 Lubricating oils: Test criteria to ISO 2943 Other media available on request
Opening pressure of by-pass valve	$\Delta p_0 = 43 \text{ psi} \pm 7 \text{ psi}$ $\Delta p_0 = 3 \text{ bar} \pm 0.5 \text{ bar}$
By-pass valve curves	The by-pass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.

By-pass valve curves

The by-pass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.



Model Code

Size _____ **0330** **R** **040** **AM** / _____
 0330, 0500, 0660, 0850, 0950, 1300, 2600

Type _____
 R = Return Line Element

Filtration Rating (microns) _____
 040

Element Media _____
 AM = Aquamicron® water removal

Seal _____
 (omit) = Nitrile (NBR) (standard)
 V = Fluoroelastomer (FPM) (optional)

Model Codes Containing Red are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Aquamicron® Element Size Recommendations

Size	Recommended Flow rate	Water retention capacity C _w at ΔP = 36 psi (2.5 bar) with an oil viscosity of 141 SUS (30mm ² /sec)	Part No.
0330	3.4 gpm (13 l/min) advised 26.4 gpm (100 l/min) max.	0.27 quarts (260cm ³) 0.19 quarts (180cm ³)	00315268
0500	5 gpm (19 l/min) advised 40.9 gpm (155 l/min) max.	0.42 quarts (400cm ³) 0.30 quarts (280cm ³)	00315355
0660	7.4 gpm (28 l/min) advised 67.4 gpm (255 l/min) max.	0.60 quarts (570cm ³) 0.42 quarts (400cm ³)	00315356
0850	9.2 gpm (35 l/min) advised 75.6 gpm (286 l/min) max.	0.77 quarts (730cm ³) 0.55 quarts (520cm ³)	00315357
0950	10.3 gpm (39 l/min) advised 83 gpm (314 l/min) max.	0.85 quarts (800cm ³) 0.60 quarts (570cm ³)	00315358
1300	14.3 gpm (54 l/min) advised 115.4 gpm (437 l/min) max.	1.18 quarts (1120cm ³) 0.83 quarts (790cm ³)	00315269
2600	28.2 gpm (109 l/min) advised 229.9 gpm (870 l/min) max.	2.36 quarts (2230cm ³) 1.66 quarts (1570cm ³)	00316102

Betamicon® / Aquamicron® Series Combination Filter Elements



Features

- High water retention capacity
- High dirt holding capacity
- Filtration rating $\beta_{x(c)} \geq 100$
- Stable β_x values over a wide differential pressure range (high Beta stability)

General

The presence of water in a hydraulic system causes many problems, such as the jamming of valves in fluid power systems. These problems are often incorrectly attributed to excessive levels of solid particle contamination. Sometimes these problems are caused by the build-up of rust and the reduction of the lubrication required for proper operation of bearings and slides. This can cause considerable degradation in the functioning of fluid power systems. In other words, along with solid particles, water is a serious “contaminant” in hydraulic systems.

Since methods usually employed to extract water often prove to be uneconomical when compared to the purchase price of the system, HYDAC BN/AM technology has been developed to provide an economically sound, yet effective, method of separating free water from hydraulic fluid. At the same time, this provides absolute filtration of solid particles down to 3 and 10 micron levels.

Technical Details

Collapse Pressure Rating	145 psid/10 bar
Temperature range:	32° to 160°F (0° to 71°C)
Compatibility with hydraulic media	Test criteria to ISO 2943
Flow fatigue resistance to ISO 3724	High fatigue resistance due to solid filter material supports on both sides and high inherent stability of the filter materials.
Cracking pressure of bypass valve	$\Delta p_o = 3 \text{ bar} + 10\%$ $\Delta p_o = 43 \text{ PSI} + 10\%$

Description

BN/AM filter elements are specifically designed to absorb water and achieve high efficiency filtration of solid particles from mineral oils, HFD-R oils, and rapidly biodegradable oils. A super absorber reacts with the water present in the fluid and expands to form a gel from which the water can no longer be extracted, even by increasing the system pressure. These filter elements do not remove dissolved water below the saturation level of the hydraulic medium. Solid particle filtration (3 μm , 10 μm absolute) is achieved due to the Betamicon® filter construction.

Principles of the BN/AM combined filter elements.

- BN/AM disposable elements are designed with inorganic and water-absorbent fibers.
- Highly efficient absorption of free water from mineral oils with the aid of a “super absorber” embedded in the filter material
- Excellent adsorption of fine contamination particles over a wide differential pressure range (3 μm , 10 μm absolute)
- Excellent Beta stability over a wide differential pressure range
- High balanced dirt holding and water retention capacities
- Excellent fluid compatibility due to the use of epoxy resins for impregnation and bonding
- Dynamic Element integrity as a result of a high burst pressure resistance design (e.g. during cold starts and dynamic differential pressure surges)

Model Code

Size	_____	0660	R	010	BN/AM	/ V
	0330, 0660, 0950, 1300, 2600					
Type	_____					
	R					
Filtration Rating (microns)	_____					
	003 010					
Element Media	_____					
	BN/AM = combined Betamicron®/Aquamicron®					
Seals	_____					
	(omit) = Nitrile (standard) V = Fluoroelastomer (FPM)					

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Water retention - Quick sizing table

Size	Recommended Filter flow rate in gpm / lpm	Water retention capacity* cm3 / qt
0330	3.4 / 13	190 / 0.2008
0660	7.4 / 28	400 / 0.4227
0950	10.3 / 39	560 / 0.5918
1300	14.3 / 54	790 / 0.8349
2600	28.8 / 109	1570 / 1.6592

*in cm3/qt when $\Delta p = 2.5 \text{ bar} / 36 \text{ psid}$ and viscosity = 30 mm²/s / 141 SUS

Filtration rating	Specification	Typical measured results (when $\Delta p = 2.5 \text{ bar} / 36 \text{ psid}$)
3µm	$\beta_{3(c)} \geq 100$	$\beta_{3(c)} \geq 500$
10µm	$\beta_{10(c)} \geq 100$	$\beta_{10(c)} \geq 500$

MA & MG Series Spin-On Elements



Features

- HYDAC Beta Spin™ elements are available with Multi-Layer Betamicon® media with absolute ratings of 3, 5, 10, and 20 microns (Beta Ratio ≥ 200).
- Proper support of the filter media provides high Beta Ratio values (particle removal efficiency) even at high differential pressures. The efficiency of many competitive elements drastically deteriorates as the element clogs and differential pressure increases.
- Betamicon® filter media is firmly supported to achieve flow fatigue resistance during significant pressure flow pulsations.
- High quality adhesive is used to bond the seam of the media and the endcaps to the media.
- Heavy gauge perforated support tubes are used to provide proper flow distribution and protection against element collapse

Technical Details

Construction Materials	Steel
Flow Capacity	
40	7 gpm (26 lpm)
80	15 gpm (57 lpm)
85	25 gpm (95 lpm)
90	15 gpm (57 lpm)
95	25 gpm (95 lpm)
160/190	30 gpm (114 lpm)
180/195	60 gpm (227 lpm)
Housing Pressure Rating	
Max. Operating Pressure	120 psi (8 bar)/250 psi (17 bar) (MF90/95)
Proof Pressure	180 psi (12.4 bar)/375 psi (25.8 bar) (MF90/95)
Fatigue Pressure	Contact HYDAC
Burst Pressure	Contact HYDAC
Element Collapse Pressure Rating	
BN, P, A	80 psid (5.5 bar)
Fluid Temperature Range	
-22° to 250°F (-30° to 121°C)	
Fluid Compatibility	
Compatible with all petroleum oils and synthetic fluids rated for use with Fluoroelastomer or Ethylene Propylene seals. Contact HYDAC for information on special housing and element constructions available for use with water glycols, oil/water emulsions, and HWBF.	
Bypass Valve Cracking Pressure	
$\Delta P = 3 \text{ psid (0.2 bar) + 10\% (for suction applications)}$ $\Delta P = 25 \text{ psid (1.7 bar) + 10\% (standard for nominal filters)}$ $\Delta P = 43 \text{ psid (3 bar) + 10\% (standard for absolute [BN] filters)}$ $\Delta P = 50 \text{ psid (3.4 bar) + 10\% (standard for absolute [BN] filters, MF 90/95/190/195)}$	

Model Code

	0080	MA	005	BN
Size	0040, 0080, 0090, 0160 = Standard Length Elements <i>(not available with 3 μm BN elements)</i>			
	0085 <i>(not available with BN or A elements)</i>			
	0095 <i>(not available with 20 μm BN elements)</i>			
	0180			
	Extended Length Elements			
Type	MA = UN Tap Plate Thread <i>(standard)</i>			
	Size	Thread		
	0040	3/4" - 16 UN-2B		
	0080/0085	1"-12 UN-2B		
	0090/0095	1 1/2"-16UN-2B		
	0160/0180	1 1/2"-16UN-2B		
	MG = BSPP Tap Plate Thread <i>(special)</i>			
	Size	Thread		
	0080	3/4" BSPP	Not required for BSPP ported heads produced in the USA, MA elements used on USA port codes "2.0"	
	0160	1 1/4" BSPP		
Filtration Rating (microns)	3, 5, 10, 20 = BN Filtration Rating ($\beta_{s(c)} \geq 200$)			
	010 = AM			
	3, 10, 25 = P			
Element Media	BN = Betamicron® <i>(Low Collapse)</i>			
	P = Paper			
	AM = Aquamicron® Water Removal <i>(not available 0085)</i>			
Supplementary Details	Bypass size 0040 only <i>(bypass in element)</i>			
	B1.3 = 18 PSID Bypass			
	B1.7 = 25 PSID Bypass			

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Element K Factors

"D" Pressure Elements



Size	...D...BN4HC (Betamicon® Low Collapse)				
	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030	3.504	2.374	1.251	0.618	0.176
0035	1.294	1.041	0.811	0.510	N/A*
0055	0.751	0.603	0.444	0.263	N/A*
0060	1.582	1.116	0.723	0.433	0.243
0075	0.510	0.411	0.290	0.170	N/A*
0095	0.411	0.329	0.225	0.132	N/A*
0110	0.819	0.585	0.361	0.205	0.397
0140	0.701	0.450	0.261	0.157	0.485
0160	0.718	0.480	0.252	0.193	0.595
0240	0.450	0.333	0.196	0.128	0.881
0280	0.220	0.171	0.092	0.071	1.631
0330	0.294	0.215	0.163	0.095	1.389
0500	0.181	0.132	0.081	0.058	2.183
0660	0.136	0.099	0.061	0.044	2.712
0990	0.090	0.066	0.040	0.029	3.285
1320	0.068	0.048	0.030	0.021	9.700
1500	0.069	0.058	0.032	0.018	N/A*

Size	...D...BH4HC (Betamicon® High Collapse)				
	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030	5.000	2.780	1.989	1.042	0.287
0035	-	-	-	-	-
0055	-	-	-	-	-
0060	3.210	1.785	0.993	0.669	0.507
0110	1.394	0.819	0.488	0.307	0.816
0140	1.088	0.622	0.445	0.233	0.992
0160	0.919	0.569	0.322	0.240	0.992
0240	0.578	0.374	0.214	0.158	1.764
0280	0.313	0.184	0.097	0.090	2.932
0330	0.422	0.244	0.154	0.108	2.645
0500	0.232	0.143	0.083	0.065	3.814
0660	0.179	0.106	0.055	0.049	4.740
0990	0.119	0.072	0.043	0.033	N/A*
1320	0.089	0.054	0.031	0.024	9.700
1500	0.958	0.675	0.410	0.215	N/A*



Size	...D...V Elements				
	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030	1.011	0.740	0.411	0.200	0.331
0060	0.877	0.511	0.296	0.183	0.485
0110	0.452	0.304	0.182	0.118	0.793
0140	0.320	0.261	0.172	0.126	1.080
0160	0.251	0.177	0.123	0.079	1.146
0240	0.169	0.137	0.093	0.062	1.653
0280	0.126	0.093	0.064	0.041	3.064
0330	0.121	0.097	0.065	0.043	2.579
0500	0.081	0.065	0.044	0.028	3.858
0660	0.063	0.050	0.034	0.021	4.564
0990	0.043	0.034	0.023	0.015	N/A*
1320	0.032	0.026	0.018	0.012	N/A*



Size	...D...W/HC Elements 25, 50, 74, 100, 149, 200 µm	
		Wgt. (lbs.)
0030	0.166	N/A*
0060	0.042	2.624
0110	0.023	0.661
0140	0.018	0.838
0160	0.016	1.102
0240	0.010	1.455
0280	0.009	2.425
0330	0.008	2.138
0500	0.005	N/A*
0660	0.004	3.748
0990	0.003	7.496
1320	0.002	9.700

* Not Available at the time of publication. Please contact HYDAC for latest information.
All Element K Factors in psi / gpm.

“DN” Pressure Elements



Size	...DN...BN/HC				Wgt. (lbs.)
	3 µm	5 µm	10 µm	25 µm	
0040	1.315	0.899	0.475	0.365	2.161
0063	0.819	0.541	0.330	0.256	0.331
0100	0.651	0.363	0.219	0.174	0.507
0160	0.439	0.306	0.202	0.143	N/A*
0250	0.275	0.178	0.111	0.091	1.411
0400	0.178	0.110	0.073	0.055	2.161

Size	...DN...BH/HC				Wgt. (lbs.)
	3 µm	5 µm	10 µm	25 µm	
0040	2.211	1.361	0.904	0.594	2.161
0063	1.590	1.359	0.895	0.452	0.838
0100	1.050	0.644	0.422	0.285	2.161
0160	0.439	0.274	0.219	0.143	N/A*
0250	0.292	0.183	0.151	0.107	0.705
0400	0.256	0.162	0.146	0.092	2.161

Pressure Elements for the Automotive Industry

Size	5.03.XXDBN				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
09	0.1680	0.1405	0.0788	0.0443	1.67
18	0.0800	0.0669	0.0375	0.0211	3.03
27	0.0517	0.0432	0.0242	0.0136	4.50

Size	5.03.XXDBH				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
09	0.2068	0.1457	0.0886	0.0465	10.450
18	0.0967	0.0681	0.0414	0.0217	19.026
27	0.0630	0.0444	0.0270	0.0142	27.139

Size	5.03.XXD W/HC		Wgt. (lbs.)
	25, 50, 74, 100, 149, 200 µm		
09	0.0073		1.71
18	0.0035		3.29
27	0.0023		N/A*

Size	1.11.XXDBN				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
04	0.5895	0.4999	0.2664	0.1531	0.69
08	0.2886	0.2413	0.1354	0.0761	1.02
13	0.1751	0.1464	0.0821	0.0462	1.51
16	0.1322	0.1105	0.0620	0.0348	1.89

Size	1.11.XXDBH				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
04	0.9366	0.6598	0.4012	0.2104	4.365
08	0.4553	0.3208	0.1951	0.1023	6.504
13	0.2738	0.1929	0.1173	0.0615	9.546
16	0.2060	0.1452	0.0883	0.0463	11.530

Size	1.07.XXDBN				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
04	2.0461	1.7350	0.9248	0.5313	0.26
08	0.9751	0.8152	0.4574	0.2571	0.39

Size	1.07.XXDBH				Wgt. (lbs.)
	3 µm	5 µm	10 µm	20 µm	
04	2.3965	1.6883	1.0266	0.5384	0.52
08	1.1652	0.8208	0.4991	0.2618	0.82

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All Element K Factors in psi / gpm.

"R" Return Elements



Size	...R...BN4HC (Betamicon® Low Collapse)				
	3 µm	5 µm	10 µm	20 µm	Wgt.
0030	3.749	2.407	1.470	0.808	0.070
0060	1.470	1.005	0.598	0.376	0.110
0075	1.209	0.780	0.445	0.241	0.240
0110	0.817	0.517	0.329	0.178	0.190
0140	N/A*	N/A*	N/A*	N/A*	N/A*
0160	0.522	0.323	0.208	0.159	0.320
0165	0.616	0.430	0.245	0.133	0.380
0185	0.485	0.334	0.179	0.097	N/A*
0210	0.214	0.145	0.096	0.060	N/A*
0240	0.338	0.208	0.142	0.096	0.380
0270	0.138	0.094	0.062	0.039	N/A*
0280	0.168	0.118	0.090	0.055	N/A*
0330	0.232	0.150	0.093	0.066	0.760
0500	0.162	0.104	0.069	0.044	1.040
0660	0.105	0.066	0.042	0.029	1.710
0850	0.082	0.055	0.036	0.023	2.364
0950	0.064	0.043	0.030	0.020	3.450
1300	0.045	0.032	0.024	0.014	4.050
1700	0.040	0.029	0.018	0.011	4.450
1800	0.036	0.030	0.016	0.009	N/A*
2600	0.023	0.016	0.011	0.007	6.500



Size	...R...MM		
	10 µm	15 µm	Wgt.
0060	0.420	0.263	0.110
0075	0.265	0.166	0.240
0090	0.252	0.118	N/A*
0110	0.199	0.124	0.190
0150	0.114	0.071	N/A*
0160	0.149	0.097	0.320
0165	0.146	0.091	0.380
0185	0.108	0.067	N/A*
0210	0.052	0.032	N/A*
0240	0.095	0.062	0.380
0270	0.032	0.020	N/A
0330	0.078	0.049	0.760
0500	0.052	0.032	1.040
0660	0.030	0.019	1.710
0850	0.023	0.015	2.364
0950	0.023	0.014	3.450
1300	0.016	0.010	4.050
1700	0.010	0.006	4.450
2600	0.008	0.005	6.500



Size	...R...ECO/N				
	3 µm	5 µm	10 µm	20 µm	Wgt.
0090	0.515	0.343	0.464	0.317	N/A*
0110	-	-	0.464	0.317	N/A*
0150	0.467	0.319	0.277	0.189	N/A*
0160	0.553	0.378	0.329	0.225	N/A*
0165	0.674	0.369	0.321	0.220	N/A*
0170	-	-	-	0.189	N/A*
0185	-	-	0.272	0.162	N/A*
0210	0.150	0.103	0.089	0.061	N/A*
0240	-	-	0.209	-	N/A*
0280	0.166	-	-	-	N/A*
0330	0.228	0.156	0.135	-	N/A*
0660	0.200	0.068	0.059	0.041	N/A*
0850	0.078	0.053	0.046	0.032	N/A*
0950	0.068	0.047	0.041	0.028	N/A*
1300	0.049	0.034	0.029	0.020	N/A*
1700	0.038	0.026	0.023	-	N/A*
2600	0.024	0.017	0.014	0.010	N/A*



Size	...R...P/HC (Paper)	
	10, 20 µm	Wgt.
0030	0.458	N/A*
0060	0.255	0.170
0075	0.156	0.320
0110	0.128	0.280
0160	0.077	0.290
0165	0.086	0.460
0240	0.049	0.627
0330	0.037	0.900
0500	0.024	0.805
0660	0.016	1.980
0850	0.012	2.500
0950	0.010	3.710
1300	0.007	4.450
1700	0.006	N/A*
2600	0.003	8.300



Size	...R...BN/AM		
	3 µm	10 µm	Wgt.
0330	0.477	0.164	0.960
0660	0.192	0.066	1.991
0850	0.132	0.045	N/A*
1300	0.088	0.033	4.450
2600	0.052	0.019	8.100



Size	...R...W/HC (Wire Screen)	
	25, 50, 74, 100, 149, 200 µm	Wgt.
0030	0.110	0.080
0060	0.055	0.175
0075	0.043	N/A
0110	0.030	0.290
0160	0.021	0.410
0165	0.020	0.520
0240	0.015	0.610
0330	0.010	0.960
0500	0.007	0.362
0660	0.005	1.980
0850	0.004	2.535
0950	0.003	3.520
1300	0.003	4.610
1700	0.002	N/A*
2600	0.001	8.300

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“RN” Return Elements



Size	...RN...BN/HC				Wgt.
	3 µm	5 µm	10 µm	25 µm	
0040	0.777	0.420	0.265	0.146	N/A*
0063	0.530	0.292	0.183	0.101	N/A*
0100	0.369	0.219	0.132	0.069	0.320
0160	0.184	0.137	0.095	0.055	0.810
0250	0.154	0.088	0.066	0.050	0.810
0400	0.119	0.076	0.056	0.047	0.980
0630	0.113	0.066	0.050	0.038	1.920
1000	0.038	0.027	0.022	0.014	N/A*

“AM”



Size	...AM...A	
	040A	Wgt.
0330	0.216	0.740
0500	0.138	1.023
0660	0.095	1.580
0850	0.074	1.990
0950	0.067	2.900
1300	0.048	3.550
2600	0.024	6.210

“RK”



Size	...RK...MM		
	10 µm	15 µm	Wgt.
0100	0.0964	0.0544	0.310
0201	0.0398	0.0268	0.650
0251	0.0379	0.0248	0.397
0300	0.0324	0.0161	1.220
0400	0.0299	0.0195	N/A*
0800	0.0207	0.0162	N/A*

Spin-Ons



Size	...MA...BN				Wgt.
	3 µm	5 µm	10 µm	20 µm	
0040	1.3914	1.1799	0.6289	0.3613	0.73
0080	0.5216	0.4423	0.2357	0.1354	1.35
0085	–	–	–	–	N/A*
0090	0.4841	0.3702	0.3451	0.1911	1.50
0095	0.2762	0.2112	0.1969	0.1090	2.04
0160	0.2372	0.1983	0.1113	0.0625	2.56
0180	0.1231	0.1029	0.0577	0.0325	3.69

Size	...MA...P			
	3 µm	10 µm	25 µm	Wgt.
0040	7.763	2.348	1.516	0.60
0080	1.606	0.486	0.314	1.08
0085	1.161	0.351	0.227	1.42
0090	1.594	0.482	0.311	1.29
0095	0.894	0.270	0.174	1.47
0160	0.839	0.192	0.145	2.15
0180	0.443	0.134	0.087	2.68

Size	...MA...A	
	010 µm	Wgt.
0080	0.513	1.35
0085	–	N/A
0090	0.507	1.50
0095	0.284	2.00
0160	0.233	2.50
0180	0.136	3.60

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