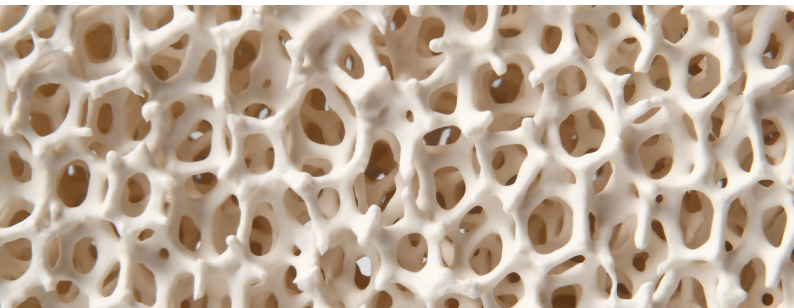


A blue abstract graphic consisting of several overlapping, curved, petal-like shapes that form a larger, irregular shape on the left side of the page.

# UDICELL and EXACTFLO Filters

Application Guide



**ASK**CHEMICALS



## Filtration Technology

ASK Chemicals offers a full portfolio of metal filtration products for all metal types and applications, which includes our UDICELL and EXACTFLO metal filtration products.

We pride ourselves on being able to deliver quality products and solutions bundled with the highest level of experience and service to assist today's metal casters in successful filter implementations.

Throughout our organization we are committed to providing our customers with the best in filtration technology, leading to improved properties and therefore a more valuable casting.

## Filtration services

### Technical services – Experienced Technical Support

- Reliable recommendations
- Fast response

### R&D – Industry Leading Capabilities

- Casting defect analysis
- Full service

### Design services – Casting Optimization

- Reduced scrap
- Calculation of optimal feeding

# UDICELL and EXACTFLO Filters

## Filter families:

### ► UDICELL

Highly robust foundry filtration products recommended for high temperature alloys and/or heavy castings

### ► EXACTFLO

Foundry filters providing cost effective means to control metal flow and inclusion removal for both ferrous and non-ferrous casting applications



► UDICELL

Investment casting filters

High quality performance filters  
specifically designed for the  
critical demands of the invest-  
ment casting industry



## Filter material selection

| Metal type              | Filter material |         |                 |               |
|-------------------------|-----------------|---------|-----------------|---------------|
|                         | Zirconia        | Alumina | Silicon carbide | Carbon bonded |
| Steel                   | X               |         |                 | X             |
| Iron                    | X               |         | X               | X             |
| Aluminum                | X               | X       | X               |               |
| Brass / Bronze / Copper | X               | X       | X               |               |
| Superalloys             | X               | X       |                 |               |

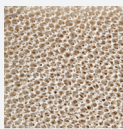
## Pore size selection: foundry



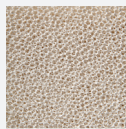
10 ppi



15 ppi



20 ppi



30 ppi

| Metal type              | Pore size |        |        |        |        |
|-------------------------|-----------|--------|--------|--------|--------|
|                         | 10 ppi    | 15 ppi | 20 ppi | 30 ppi | 45 ppi |
| Steel                   | X         | X      |        |        |        |
| Ductile iron            | X         | X      |        |        |        |
| Grey iron               |           |        | X      | X      |        |
| Aluminum                | X         | X      | X      | X      | X      |
| Brass / Bronze / Copper | X         | X      | X      | X      |        |



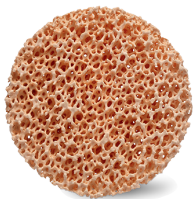
## UDICELL Zirconia Filters

Stainless/low alloy steel

- 1,700 °C max. temperature
- High purity/thermal grade
- Open pore structure
- Extremely durable and consistent
- Metal types: steel
- Pore sizes: 10–20ppi

| Filter size* |              | Ledge size<br>mm | Filter capacities   |                          | Pieces<br>per Box |
|--------------|--------------|------------------|---------------------|--------------------------|-------------------|
| inch         | mm           |                  | kg/<br>Carbon Steel | kg/high<br>alloyed steel |                   |
| DIA 2 x 0.75 | DIA 50 x 20  | 5                | 29                  | 43                       | 240               |
| DIA 3 x 1    | DIA 75 x 25  | 7                | 66                  | 97                       | 120               |
| DIA 4 x 1    | DIA 100 x 25 | 9                | 118                 | 173                      | 60                |
| DIA 5 x 1.25 | DIA 125 x 30 | 11               | 184                 | 270                      | 32                |
| DIA 6 x 1.25 | DIA 150 x 30 | 12               | 265                 | 389                      | 24                |
| DIA 7 x 1.25 | DIA 175 x 30 | 14               | 361                 | 529                      | 20                |
|              | DIA 200 x 35 | 16               | 471                 | 691                      | 12                |
|              | DIA 250 x 35 | 18               | 736                 | 1,080                    | 6                 |
| 2x2x0.75     | DIA 300 x 35 | 20               | 1,060               | 1,555                    | 3                 |
|              | 50x50x20     | 5                | 38                  | 55                       | 240               |
|              | 75x75x25     | 7                | 84                  | 124                      | 100               |
| 4x4x1        | 100x100x25   | 9                | 150                 | 220                      | 60                |
| 4x8x1        | 100x200x25   | 11               | 300                 | 440                      | 20                |
| 5x5x1.25     | 125x125x30   | 11               | 234                 | 344                      | 32                |
| 6x6x1.25     | 150x150x30   | 12               | 338                 | 495                      | 24                |
| 6x8x1.25     | 150x200x30   | 13               | 450                 | 660                      | 16                |
| 7x7x1.25     | 175x175x30   | 14               | 459                 | 674                      | 15                |
| 8x8x1.5      | 200x200x35   | 16               | 600                 | 880                      | 6                 |

\* Further information on the back page of this brochure



## UDICELL PSZT (Tan)

Stainless/low alloy steel

- Open pore structure
- Extremely durable & consistent
- Metal types: steel
- Pore sizes: 10–20 ppi

| Filter size* |                | Ledge size<br>mm | Filter capacities    |                           | Pieces<br>per Box |
|--------------|----------------|------------------|----------------------|---------------------------|-------------------|
| inch         | mm             |                  | kg /<br>Carbon Steel | kg /high<br>alloyed steel |                   |
| DIA 2 x 0.75 | DIA 50 x 20    | 5                | 29                   | 43                        | 240               |
| DIA 3 x 1    | DIA 75 x 25    | 7                | 66                   | 97                        | 120               |
| DIA 4 x 1    | DIA 100 x 25   | 9                | 118                  | 173                       | 60                |
| DIA 5 x 1.25 | DIA 125 x 30   | 11               | 184                  | 270                       | 32                |
| DIA 6 x 1.25 | DIA 150 x 30   | 12               | 265                  | 389                       | 24                |
| DIA 6 x 1.5  | DIA 200 x 35   | 16               | 471                  | 690                       | 12                |
| 2 x 2 x 0.75 | 50 x 50 x 20   | 5                | 38                   | 55                        | 240               |
| 3 x 3 x 1    | 75 x 75 x 25   | 7                | 84                   | 124                       | 100               |
| 4 x 4 x 1    | 100 x 100 x 25 | 9                | 150                  | 220                       | 60                |
| 4 x 8 x 1    | 100 x 200 x 25 | 11               | 300                  | 440                       | 20                |
| 5 x 5 x 1.25 | 125 x 125 x 30 | 11               | 234                  | 344                       | 32                |
| 6 x 6 x 1.25 | 150 x 150 x 30 | 12               | 338                  | 495                       | 24                |
| 6 x 8 x 1.25 | 150 x 200 x 30 | 13               | 450                  | 660                       | 16                |

\* Further information on the back page of this brochure





## UDICELL Tubular Filter & EXACTFILL Housing System

- 3x greater filter area
- Self-supporting geometry
- Quick install – easy to use
- Metal types: steel, low carbon low alloy steel, stainless steel, iron (ductile)
- Pore sizes: 10ppi

| Filter housing    | Filter size*         |                         | Inlet / outlet diameter |               | Capacities steel | Capacities ductile iron | Filter Area (Outside) |
|-------------------|----------------------|-------------------------|-------------------------|---------------|------------------|-------------------------|-----------------------|
|                   | inch                 | mm                      | inch                    | mm            | kg               | kg                      | cm <sup>2</sup>       |
| No Housing        | 6 OD x 3.5 ID x 4 H  | 150 OD x 90 ID x 100 H  | –                       | –             | 600 – 1,100      | 800 – 1,700             | 471                   |
| No Housing        | 6 OD x 3.5 ID x 5 H  | 150 OD x 90 ID x 125 H  | –                       | –             | 700 – 1,300      | 1,200 – 2,200           | 589                   |
| EXACTFILL 150/60  | 6 OD x 3.5 ID x 6 H  | 150 OD x 90 ID x 150 H  | 2.36 / 2 x 2.36         | 60 / 2 x 60   | 1,000 – 2,000    | 2,000 – 3,000           | 707                   |
| EXACTFILL 150/80  | 6 OD x 3.5 ID x 6 H  | 150 OD x 90 ID x 150 H  | 3.15 / 2 x 3.15         | 80 / 2 x 80   | 1,000 – 2,000    | 2,000 – 3,000           | 707                   |
| EXACTFILL 200/80  | 6 OD x 3.5 ID x 8 H  | 150 OD x 90 ID x 200 H  | 3.15 / 2 x 3.15         | 80 / 2 x 80   | 1,500 – 3,500    | 2,500 – 4,500           | 942                   |
| EXACTFILL 300/100 | 7 OD x 4.3 ID x 12 H | 180 OD x 110 ID x 300 H | 4.7 / 2 x 4             | 120 / 2 x 100 | 3,000 – 6,500    | 3,500 – 10,000          | 1,696                 |

\* Further information on the back page of this brochure



## UDICELL Carbon Bonded Filters

Stainless/low alloy steel

- Ideal for low pouring temps
- Efficient filtration and oxide reduction
- Metal types: steel and iron
- Pore sizes: 10–15ppi

| Filter size* |                | Ledge Size | Capacity            | Pieces  |
|--------------|----------------|------------|---------------------|---------|
| inch         | mm             | mm         | kg/<br>carbon steel | per Box |
| DIA 2 x 0.75 | DIA 50 x 20    | 5          | 38                  | 200     |
| DIA 3 x 1    | DIA 75 x 25    | 7          | 86                  | 96      |
| DIA 4 x 1    | DIA 100 x 25   | 9          | 153                 | 48      |
| DIA 5 x 1.25 | DIA 125 x 30   | 11         | 239                 | 24      |
| DIA 6 x 1.25 | DIA 150 x 30   | 12         | 345                 | 18      |
| DIA 8 x 1.5  | DIA 200 x 35   | 16         | 612                 | 9       |
|              | DIA 250 x 40   | 18         | 957                 | 4       |
|              | DIA 300 x 40   | 20         | 1,378               | 2       |
| 2 x 2 x 0.75 | 50 x 50 x 20   | 5          | 49                  | 200     |
| 3 x 3 x 1    | 75 x 75 x 25   | 7          | 110                 | 80      |
| 4 x 4 x 1    | 100 x 100 x 25 | 9          | 195                 | 48      |
| 5 x 5 x 1.25 | 125 x 125 x 30 | 11         | 305                 | 24      |
| 6 x 6 x 1.25 | 150 x 150 x 30 | 12         | 439                 | 18      |
| 4 x 8 x 1    | 100 x 200 x 25 | 12         | 390                 | 16      |
| 6 x 8 x 1.25 | 150 x 200 x 30 | 16         | 585                 | 10      |
| 8 x 8 x 1.5  | 200 x 200 x 35 | 18         | 780                 | 4       |

\* Further information on the back page of this brochure



## EXACTFLO Silicon Carbide Filters

Gray/ductile iron

- Remove inclusions
- Improve surface finish
- Provide laminar flow
- Metal types: iron (ductile), iron (gray)
- Pore sizes: 10–15 ppi (ductile iron),  
20–30 ppi (gray iron)

| Item                    | Dimensions*     | Capacity |      | Pieces | Pieces |
|-------------------------|-----------------|----------|------|--------|--------|
|                         |                 | kg       |      | box    | pallet |
|                         | mm              | ductile  | gray |        |        |
| EXACTFLO 30x50x22 SIC   | 30x50x22        | 30       | 60   | 840    | 35,280 |
| EXACTFLO 40x40x15 SIC   | 40x40x15        | 30       | 60   | 1,078  | 45,276 |
| EXACTFLO 50x50x15 SIC   | 50x50x15        | 40       | 80   | 756    | 31,752 |
| EXACTFLO 50x50x20 SIC   | 50x50x20        | 45       | 90   | 594    | 24,948 |
| EXACTFLO 50x50x22 SIC   | 50x50x22        | 50       | 100  | 540    | 22,680 |
| EXACTFLO 50x75x15 SIC   | 50x75x15        | 60       | 120  | 504    | 21,168 |
| EXACTFLO 50x75x22 SIC   | 50x75x22        | 70       | 140  | 360    | 15,120 |
| EXACTFLO 50x100x20 SIC  | 50x100x20       | 90       | 180  | 297    | 12,474 |
| EXACTFLO 50x100x22 SIC  | 50x100x22       | 100      | 200  | 270    | 11,340 |
| EXACTFLO 60x60x22 SIC   | 60x60x22        | 70       | 140  | 350    | 14,700 |
| EXACTFLO 75x75x22 SIC   | 75x75x22        | 100      | 200  | 240    | 10,080 |
| EXACTFLO 75x100x22 SIC  | 75x100x22       | 150      | 300  | 180    | 7,560  |
| EXACTFLO 100x100x22 SIC | 100x100x22      | 180      | 360  | 120    | 5,040  |
| EXACTFLO 125x125x30 SIC | 125x125x30      | 320      | 640  | 56     | 2,352  |
| EXACTFLO 150x150x22(30) | 150x150x22 (30) | 405      | 810  | 60     | 2,520  |
| EXACTFLO DIA 40x20 SIC  | DIA 40x20 SIC   | 25       | 50   | 847    | 35,574 |
| EXACTFLO DIA 50x22 SIC  | DIA 50x22 SIC   | 35       | 70   | 540    | 22,680 |
| EXACTFLO DIA 60x22 SIC  | DIA 60x22 SIC   | 55       | 110  | 350    | 14,700 |
| EXACTFLO DIA 70x22 SIC  | DIA 70x22 SIC   | 70       | 140  | 240    | 10,080 |
| EXACTFLO DIA 80x22 SIC  | DIA 80x22 SIC   | 100      | 200  | 240    | 10,080 |
| EXACTFLO DIA 100x22 SIC | DIA 100x22 SIC  | 170      | 340  | 120    | 5,040  |
| EXACTFLO DIA 125x30 SIC | DIA 125x30 SIC  | 270      | 540  | 56     | 2,352  |
| EXACTFLO DIA 150x30 SIC | Dia 150x30 SIC  | 318      | 636  | 42     | 1,764  |

\* Further information on the back page of this brochure



## EXACTFLO Alumina Filters

### Aluminum

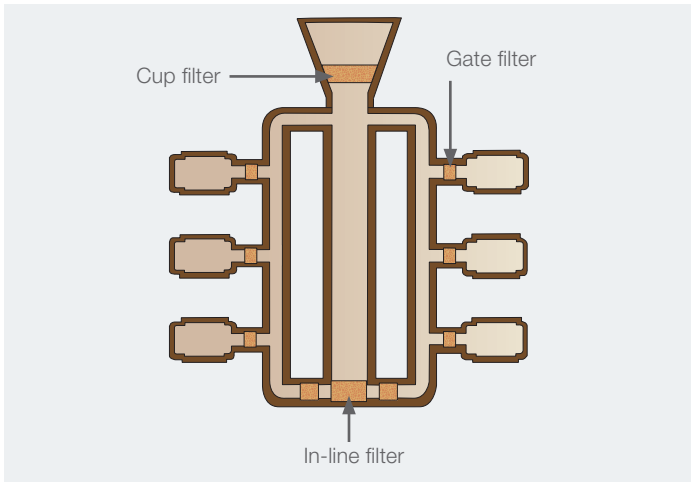
- Remove inclusions
- Improve surface finish
- Provide laminar flow
- Metal types: alumina
- Pore sizes: 10–30 ppi

| Filter size* |            | Ledge size | Flow rate | Capacity |
|--------------|------------|------------|-----------|----------|
| inch         | mm         | mm         | kg/sec    | kgs      |
| 2x2x0.75     | 50x50x22   | 5          | 1         | 27       |
| 3x3x1        | 75x75x25   | 7          | 3         | 61       |
| 4x4x1        | 100x100x25 | 9          | 5         | 108      |
| 5x5x1.25     | 125x125x30 | 11         | 8         | 169      |
| 6x6x1.25     | 150x150x30 | 12         | 12        | 243      |
| 2 ODx0.75    | 50 ODx22   | 5          | 1         | 21       |
| 3 ODx1       | 75 ODx25   | 7          | 2         | 48       |
| 4 ODx1       | 100 ODx25  | 9          | 4         | 85       |
| 5 ODx1.25    | 125 ODx30  | 11         | 7         | 132      |
| 6 ODx1.25    | 150 ODx30  | 12         | 10        | 191      |

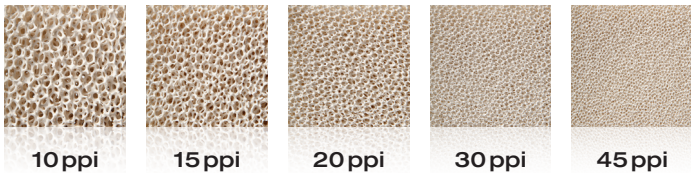
\* Further information on the back page of this brochure

# Investment Casting Filtration

## Filter location and pore sizes



### Pore size selection: investment foundry



| Filter location | Pore Size |    |    |    |    |
|-----------------|-----------|----|----|----|----|
|                 | 10        | 15 | 20 | 30 | 45 |
| Cup             | X         | X  | X  | X  |    |
| In-Line         | X         | X  | X  | X  |    |
| Gate            |           | X  | X  | X  | X  |

# Investment Casting Filtration

## Cast capacity and edge coat treatments



**FG** – Range of fiber gasket materials to ensure a snug fit



**SEC** – smooth uniform edge coating for straight wall filters



**FEC** – durable edge coating applied to tapers and special shapes



**No edge coat** – standard filter webs

### Gate filters

| Filter size |    | Flow rate           |                     |                     | Capacity        |                    |
|-------------|----|---------------------|---------------------|---------------------|-----------------|--------------------|
| inch        | mm | 10 ppi<br>kgs / sec | 15 ppi<br>kgs / sec | 20 ppi<br>kgs / sec | air melt<br>kgs | vacuum melt<br>kgs |
| 0.50        | 13 | 0.19                | 0.17                | 0.16                | 3               | 4                  |
| 0.75        | 19 | 0.44                | 0.39                | 0.35                | 7               | 9                  |
| 1.00        | 25 | 0.78                | 0.70                | 0.63                | 12              | 16                 |

### Cup filters

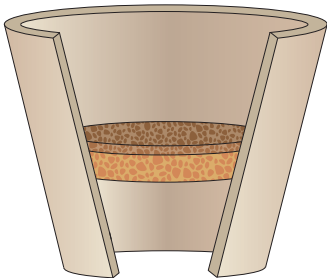
| Filter size* |              | Flow rate           |                     |                     | Capacity        |                    |
|--------------|--------------|---------------------|---------------------|---------------------|-----------------|--------------------|
| inch         | mm           | 10 ppi<br>kgs / sec | 15 ppi<br>kgs / sec | 20 ppi<br>kgs / sec | air melt<br>kgs | vacuum melt<br>kgs |
| 2 TOD x 1    | 50 TOD x 25  | 3.15                | 2.84                | 2.55                | 50              | 63                 |
| 3 TOD x 1    | 75 TOD x 25  | 7.20                | 6.48                | 5.83                | 111             | 143                |
| 4 TOD x 1    | 100 TOD x 25 | 12.60               | 11.34               | 10.21               | 198             | 254                |
| 5 TOD x 1    | 125 TOD x 25 | 19.35               | 17.42               | 15.67               | 309             | 397                |

# Investment Casting Filtration

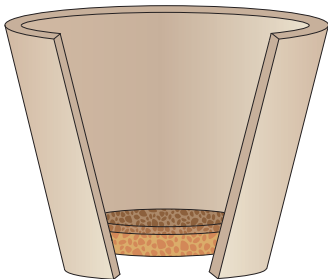
## Cup filter placement

- Cup filters should be placed as close to the bottom of the cup as possible
- It is preferred to cover the entire surface area of the filter as quickly as possible
- Greater metal head pressure helps filter flow and priming

Incorrect placement



Correct placement



0  
1  
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2  
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Please contact ASK for any questions concerning the usage of these marks.

TOD = Tapered Outside Diameter

DIA or OD = Outside Diameter

ID = Inside Diameter

H = Height

3  
Excerpt from the delivery program. Data are to be understood as guideline values and not as guaranteed values. See related product data sheet.

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