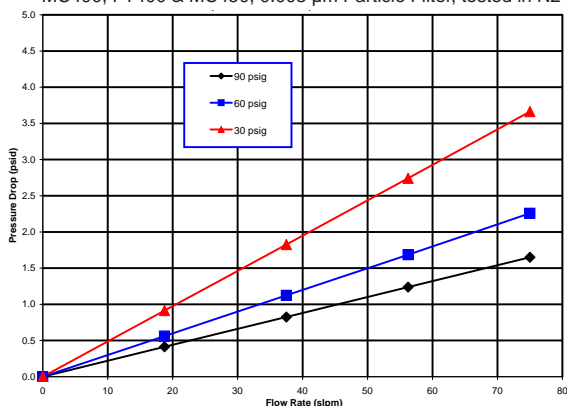


MicroTorr purifiers are the most complete and reliable solution for Point-of-Use (POU) gas purification. Combining model size with a selection of gas-specific purification materials, MicroTorr purifiers can be tailored to many different customer applications, while maintaining impurity removal to Part-Per-Billion (ppbV) levels or better. Optional valves and a 0.003 micron particle filter are available as well as custom subsystem configurations.

**Competitive Advantages and Benefits:**

- **Reliability.** Uncompromised process consistency and yield improvement.
- **Performance.** State-of-the-art purification technology, low pressure drop, and long lifetimes.
- **Regenerability.** Most MicroTorr media are factory regenerable, minimizing potentially hazardous waste.
- **Quality.** 316L stainless steel, Helium leak checked, pressure tested, and analytical testing to Part-per-Trillion (pptv) levels.
- **Support.** Lifetime estimation and regeneration service available through SAES Pure Gas Sales Network.

Pressure Drop vs. Flow Rate  
MC400, FT400 & MC450, 0.003 µm Particle Filter, tested in N2



**Ordering Information**

**MC450 - XXX XX**

**Model**

**Media**

**Options**

|       |                                                                 |                                                                                          |
|-------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------|
| MC450 | 202, 203, 206, 302, 403, 404, 502, 702, 902, 903, 904, 905, 906 | No options<br>F 0.003µm Particle Filter<br>V Inlet/Outlet Valves<br>FV Filter and Valves |
|-------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------|

Example: MC450-902F

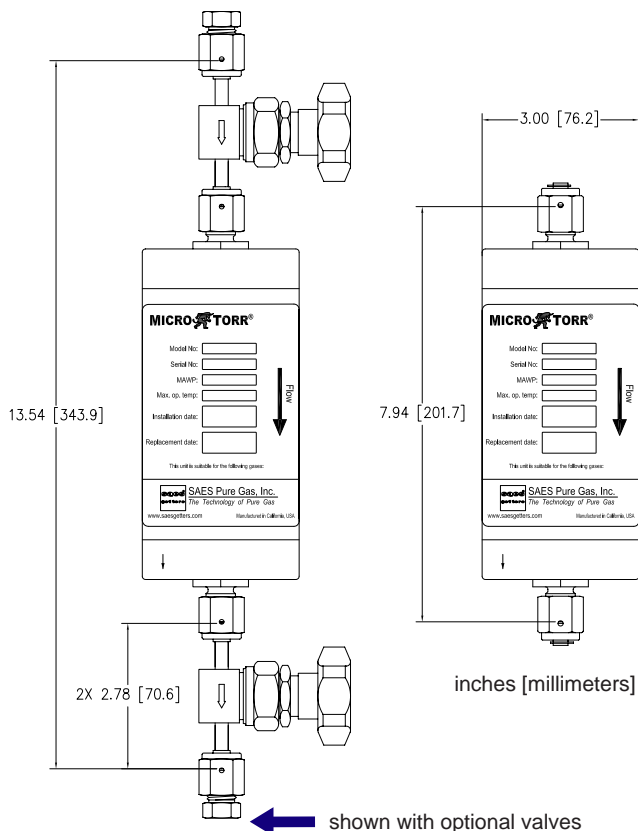
Model: MC450    Media: 902    Options: 0.003µm Particle Filter



**MC450**

- **Lifetime**  
Consult factory for specific lifetimes
- **Maximum Flow: 75 slpm\***
- **Nominal Flow: 10 slpm**
- **Maximum Pressure: 250 psig**

\*See reverse for Arsine & Phosphine flowrates





**Mechanical Specifications**

| Model                  | MC450-*                             | MC450-V                             | MC450-F                             | MC450-*FV                           |
|------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Maximum Flow           | 75 slpm†                            | 75 slpm†                            | 75 slpm†                            | 75 slpm†                            |
| Nominal Flow           | 10 slpm†                            | 10 slpm†                            | 10 slpm†                            | 10 slpm†                            |
| Material               | Body-316L Stainless Steel           |                                     |                                     |                                     |
| Filter (Outlet)        | 2.0 micron metal                    |                                     | Integrated 0.003 micron, metal      |                                     |
| Valves                 | N/A                                 | 1/4" manual                         | N/A                                 | 1/4" manual                         |
| Max Operating Pressure | 250 psig (17.3 barg) @ 40°C         |                                     | 250 psig (17.3 barg) @ 40°C         |                                     |
| Max Temperature Rating | 40°C (104°F)                        | 40°C (104°F)                        | 40°C (104°F)                        | 40°C (104°F)                        |
| Inlet                  | 1/4" MVCR                           | 1/4" FVCR                           | 1/4" MVCR                           | 1/4" FVCR                           |
| Outlet                 | 1/4" MVCR                           | 1/4" FVCR                           | 1/4" MVCR                           | 1/4" FVCR                           |
| Length (Face to Face)  | 7.94"±.03 [201.7mm±0.8]             | 13.54"±.08 [343.9mm±2.0]            | 7.94"±.03 [201.7mm±0.8]             | 13.54"±.08 [343.9mm±2.0]            |
| Outside Diameter       | 3.00" [76.2mm]                      | 3.00" [76.2mm]                      | 3.00" [76.2mm]                      | 3.00" [76.2mm]                      |
| Electropolish          | Yes                                 | Yes                                 | Yes                                 | Yes                                 |
| Leak Rating            | 1x10 <sup>-9</sup> atm cc/sec of He | 1x10 <sup>-9</sup> atm cc/sec of He | 1x10 <sup>-9</sup> atm cc/sec of He | 1x10 <sup>-9</sup> atm cc/sec of He |
| Weight                 | 4.1 lb (1.8 kg)                     | 6.0 lb (2.7 kg)                     | 4.1 lb (1.8 kg)                     | 6.0 lb (2.7 kg)                     |

\*The 3 digit number found in the model number equates to the "Media" row in the table below.  
 †Flowrates with 502 media: Arsine/Phosphene max= 28.0 slpm, nominal= 10.0 slpm.

**MC450 Purification and Removal Capabilities**

| Media | Gases Purified                                                                                                                                                                                                                                                                                                                                         | Impurities Removed                                                           | Outlet Performance | Regenerable | Dangerous Goods (DG) Classification |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------|-------------|-------------------------------------|
| 202   | Ar, CDA, H <sub>2</sub> , He, Kr, N <sub>2</sub> , Ne, O <sub>2</sub> , Xe                                                                                                                                                                                                                                                                             | H <sub>2</sub> O                                                             | < 1 ppbV           | YES         | Non-DG                              |
| 203   | Ar, CDA, H <sub>2</sub> , He, Kr, N <sub>2</sub> , Ne, O <sub>2</sub> , Xe                                                                                                                                                                                                                                                                             | H <sub>2</sub> O, CO <sub>2</sub>                                            | < 100 pptV         | YES         | Non-DG                              |
|       |                                                                                                                                                                                                                                                                                                                                                        | Acids, Bases, Organics, Refractory Compounds*                                | < 10 pptV          |             |                                     |
| 206   | CO                                                                                                                                                                                                                                                                                                                                                     | H <sub>2</sub> O                                                             | < 1 ppbV           | YES         | Non-DG                              |
| 302   | B <sub>2</sub> H <sub>6</sub> , BCl <sub>3</sub> , BF <sub>3</sub> , CCl <sub>4</sub> , Cl <sub>2</sub> , CO <sub>2</sub> , GeCl <sub>4</sub> , GeH <sub>4</sub> , H <sub>2</sub> S, H <sub>2</sub> Se, HBr, HCl, N <sub>2</sub> O, NO, SiCl <sub>4</sub> , SiF <sub>4</sub> , SiH <sub>2</sub> Cl <sub>2</sub> , SiHCl <sub>3</sub> , SO <sub>2</sub> | H <sub>2</sub> O                                                             | < 1 ppbV           | NO          | Non-DG                              |
| 403   | Ar, CDA, H <sub>2</sub> , He, Kr, N <sub>2</sub> , Ne, Xe                                                                                                                                                                                                                                                                                              | Acids, Bases, Organics, Refractory Compounds*                                | < 1 ppbV           | NO          | Non-DG                              |
| 404   | CO <sub>2</sub> , C <sub>2</sub> H <sub>2</sub> , Ar, CDA, H <sub>2</sub> , He, Kr, N <sub>2</sub> , Ne, Xe                                                                                                                                                                                                                                            | NMHC                                                                         | < 1 ppbV           | YES         | Non-DG                              |
| 502   | PH <sub>3</sub> , AsH <sub>3</sub>                                                                                                                                                                                                                                                                                                                     | H <sub>2</sub> O, O <sub>2</sub>                                             | < 1 ppbV           | NO          | Non-DG                              |
| 702   | NH <sub>3</sub> , C <sub>2</sub> H <sub>7</sub> N, C <sub>2</sub> H <sub>8</sub> N <sub>2</sub>                                                                                                                                                                                                                                                        | H <sub>2</sub> O, O <sub>2</sub> , CO <sub>2</sub>                           | < 1 ppbV           | YES         | DG - UN3089 Class 4.1               |
| 902   | Ar, He, Kr, N <sub>2</sub> , Ne, Xe                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> , H <sub>2</sub> NMHC | < 1 ppbV           | YES         | DG - UN2881 Class 4.2               |
| 903   | Ar, He, Kr, N <sub>2</sub> , Ne, Xe                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> , H <sub>2</sub>      | < 100 pptV         | YES         | DG - UN2881 Class 4.2               |
|       |                                                                                                                                                                                                                                                                                                                                                        | Acids, Bases, Organics, Refractory Compounds*                                | < 10 pptV          |             |                                     |
| 904   | H <sub>2</sub>                                                                                                                                                                                                                                                                                                                                         | H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> , NMHC                | < 1 ppbV           | YES         | DG - UN2881 Class 4.2               |
| 905   | C <sub>2</sub> F <sub>6</sub> , C <sub>2</sub> H <sub>6</sub> , C <sub>2</sub> F <sub>8</sub> , C <sub>2</sub> H <sub>8</sub> , C <sub>2</sub> F <sub>4</sub> H <sub>2</sub> , C <sub>4</sub> F <sub>8</sub> , C <sub>4</sub> H <sub>10</sub> , CCl <sub>4</sub> , CF <sub>4</sub> , CH <sub>4</sub> , CHF <sub>3</sub> , SF <sub>6</sub>              | H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> , H <sub>2</sub> NMHC | < 1 ppbV           | YES         | DG - UN2881 Class 4.2               |
| 906   | CDA, O <sub>2</sub>                                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> O, CO, CO <sub>2</sub> , NMHC                                 | < 1 ppbV           | YES         | Non-DG                              |

\*Organic compounds (C>5) measured as Toluene. Acid compounds (SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S...) measured as SO<sub>2</sub>. Base compounds (NH<sub>3</sub>, amines...) measured as NH<sub>3</sub>. Silicon/Refractory compounds (HMDSA, HMDSO, TMS) measured as HMDSO

**Other Sizes Available**

| Model Number        | MC1 | MC50 | MC190 | MC200 | MC400 | MC450 | MC500 | MC1500 | MC2525 | MC2550 | MC3000 | MC4500 | MC9000 |
|---------------------|-----|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Maximum Flow (slpm) | 5   | 10   | 50    | 50    | 60    | 75    | 100   | 250    | 300    | 500    | 500    | 1000   | 1000   |
| Average Flow (slpm) | 0.5 | 1.5  | 5     | 5     | 9     | 10    | 12    | 40     | 80     | 80     | 80     | 200    | 300    |

**Piping Options Available**

3 Valve Bypass