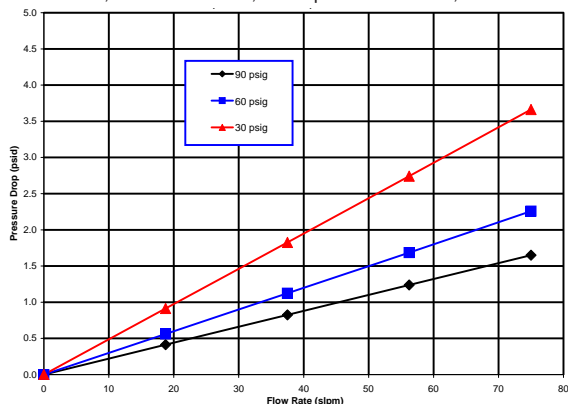


MicroTorr purifiers are the most complete and reliable solution for Point-of-Use (POU) gas purification. Combining model size with a selection of gas-specific purification materials, MicroTorr purifiers can be tailored to many different customer applications, while maintaining impurity removal to Part-Per-Billion (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

XX400 - XXX XX

| Model | Media | Options |
|-------|---------------------|---------------------------|
| MC400 | 202, 203, 206, 302, | No options |
| HP400 | 403, 404, 502, 702, | F 0.003µm Particle Filter |
| | 902, 903, 904, 905, | V Inlet/Outlet Valves |
| | 906 | FV Filter and Valves |

Example: MC400-902F

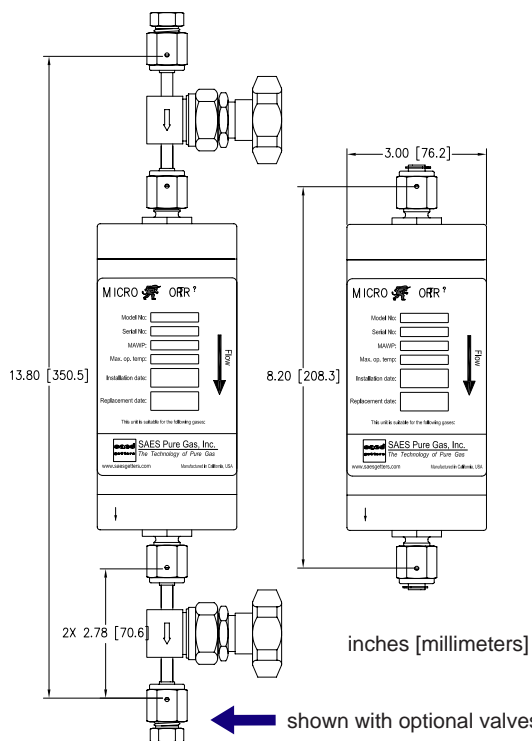
Model: MC400 Media: 902 Options: 0.003µm Particle Filter



MC400 & HP400

- **Lifetime**
Consult factory for specific lifetimes
- **Maximum Flow: 60 slpm***
- **Nominal Flow: 9 slpm***
- **Maximum Pressure: 250 psig (MC400)
1,000 psig (HP400)**

*See reverse for Arsine & Phosphine flowrates





Mechanical Specifications

| Model ()=Option | MC400-*(F) | MC400-*(F)V | HP400-*(F) | HP400-*(F)V |
|------------------------|---|-------------------------------------|-------------------------------------|-------------------------------------|
| Maximum Flow | 60 slpm [†] | 60 slpm [†] | 60 slpm [†] | 60 slpm [†] |
| Nominal Flow | 9 slpm [†] | 9 slpm [†] | 9 slpm [†] | 9 slpm [†] |
| Material | Body-316L Stainless Steel | | | |
| Filter (Outlet) | 2.0 micron metal; (F) Optional 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 | | 1000 psig (69 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) | 8.20"±.03 [208.3mm±0.8] | 13.80"±.08 [350.5mm±2.0] | 8.20"±.03 [208.3mm±0.8] | 13.80"±.08 [350.5mm±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 ⁻⁹ atm cc/sec of He | 1x10 ⁻⁹ atm cc/sec of He | 1x10 ⁻⁹ atm cc/sec of He | 1x10 ⁻⁹ atm cc/sec of He |
| Weight | 4.9 lbs (2.2 kg) | 6.8 lbs (3.1 kg) | 4.9 lbs (2.2 kg) | 6.8 lbs (3.1 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= 32.0 slpm, nominal= 15.0 slpm.

Purification and Removal Capabilities

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

*Organic compounds (C>5) measured as Toluene. Acid compounds (SO₂, NO_x, H₂S..) measured as SO₂. Base compounds (NH₃, amines..) measured as NH₃. Silicon/Refractory compounds (HMDSA, HMDSO, TMS) measured as HMDSO

**Not available in HP models

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