

GateKeeper® GPU MC9000 Gas Purifiers

Superior purity control

GateKeeper® GPU 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, GateKeeper GPU 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.



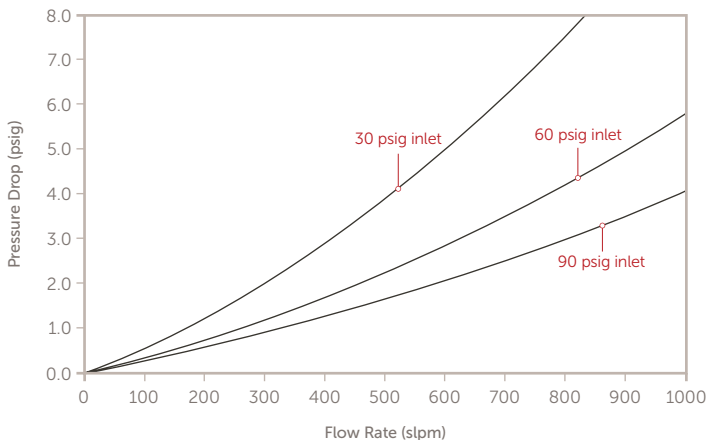
Competitive advantages and benefits

| | |
|-----------------------|---|
| Reliability | Uncompromised process consistency and yield improvement |
| Performance | State-of-the-art purification technology, low pressure drop, and long lifetimes |
| Regenerability | Most GateKeeper GPU 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 the Entegris, Inc. |

SPECIFICATIONS

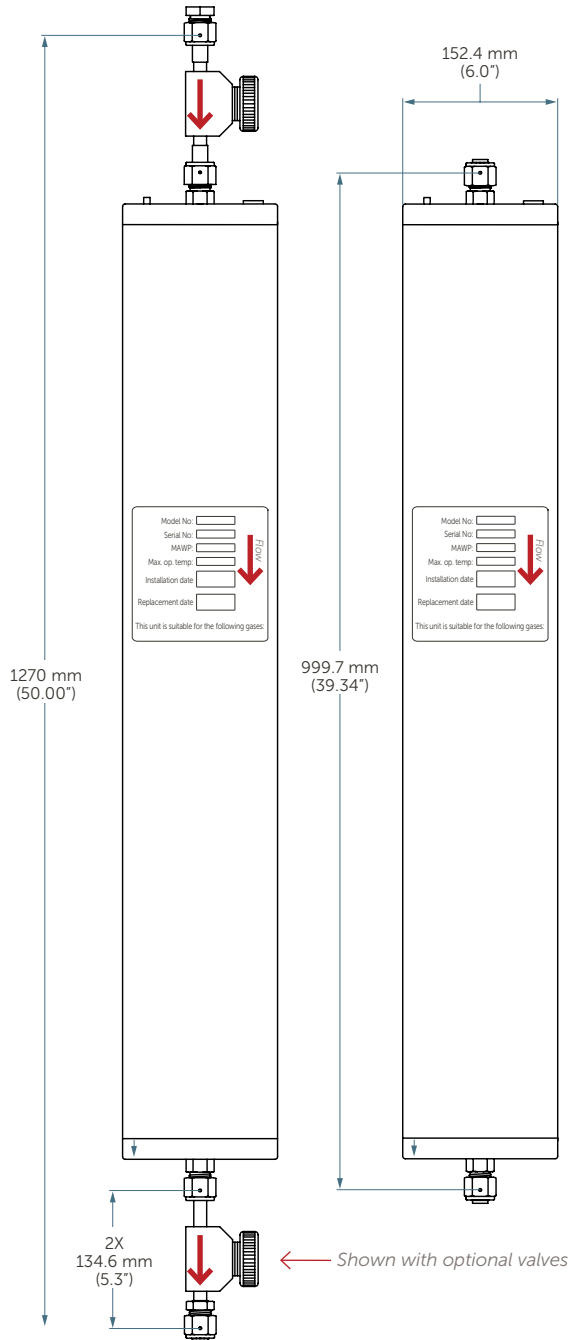
| | |
|---------------------------|--|
| Lifetime | Consult factory for specific lifetimes |
| Maximum flow | 1000 slpm |
| Nominal flow | 300 slpm |
| Operating pressure | 0 – 250 psig |

Pressure Drop vs Flow Rate
MC9000, .003 µm Particle Filter, Tested in N₂



DIMENSIONS

Install vertically with flow downward in direction of arrow.
Consult factory for other mounting options.



MECHANICAL SPECIFICATIONS

| Model | MC9000-* | MC9000- <i>V</i> | MC9000-* | MC9000- <i>V</i> |
|-------------------------|--|--|--|--|
| Maximum flow | 1000 slpm | 1000 slpm | 1000 slpm | 1000 slpm |
| Nominal flow | 300 slpm | 300 slpm | 300 slpm | 300 slpm |
| Material | Body-316L stainless steel | | | |
| Filter (outlet) | 2.0 micron metal | | Integrated 0.003 micron, metal | |
| Valves | N/A | ½" manual diaphragm | N/A | ½" manual diaphragm |
| Operating pressure** | 0 – 17.3 barg (0 – 250 psig) | | | |
| Operating temperature** | -20° – 65°C (-4° – 149°F) | | | |
| Inlet | ½" MVCR | ½" FVCR | ½" MVCR | ½" FVCR |
| Outlet | ½" MVCR | ½" MVCR | ½" MVCR | ½" MVCR |
| Length (face-to-face) | 99.97 ±1.5 cm (39.34 ±0.06") | 127.0 ±2.0 cm (50 ±0.08") | 99.97 ±1.5 cm (39.34 ±0.06") | 127.0 ±2.0 cm (50 ±0.08") |
| Outside diameter | 152.4 mm (6.0") | | 152.4 mm (6.0") | |
| Electropolish | Yes | Yes | Yes | Yes |
| Leak rating | 1×10 ⁻⁹ atm cc/sec of He | 1×10 ⁻⁹ atm cc/sec of He | 1×10 ⁻⁹ atm cc/sec of He | 1×10 ⁻⁹ atm cc/sec of He |
| Weight | 27.4 kg (60.4 lbs) | 29.9 kg (66.0 lbs) | 27.4 kg (60.4 lbs) | 29.9 kg (66.0 lbs) |

*The three digit number found in the model number equates to the "Media" row in the table below.

**Must be in gas phase.

†Flowrates with 502 media: arsine/phosphine max = 100 slpm, nominal = 15.0 slpm.

PURIFICATION AND REMOVAL CAPABILITIES

| Media | Gases Purified | Impurities Removed | Outlet Performance | Regenerable | Dangerous Goods (DG) Classification |
|-------|--|---|--------------------|-------------|-------------------------------------|
| 202 | CDA, O ₂ , N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , D ₂ , CO ₂ , N ₂ O, NO, CF ₄ | H ₂ O | <1 ppb | Yes | Non-DG |
| 203 | CDA, O ₂ , N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , D ₂ , N ₂ O, NO, CF ₄ | H ₂ O, CO ₂ | <100 ppt | Yes | Non-DG |
| | | Volatile acids, organics, refractory compounds | <1 ppt | | |
| | | Metals | <1 ppb | | |
| 302 | HCl, Cl ₂ , B ₂ H ₆ , BCl ₃ , CClH ₃ , GeCl ₄ , GeH ₄ , H ₂ S, H ₂ Se, HBr, NF ₃ , SiCl ₄ , SiF ₄ , SiH ₂ Cl ₂ , SiHCl ₃ , SO ₂ , CHClF ₂ , BF ₃ | H ₂ O | <1 ppb | No | Non-DG |
| | | Metals | <1 ppb | | |
| 403 | N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , CDA, O ₂ | Volatile acids, organics, refractory compounds | <1 ppt | No | Non-DG |
| | | Volatile bases | <5 ppt | | |
| | | Metals | <1 ppb | | |
| 404 | N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , CDA, O ₂ , CO ₂ , C ₂ H ₂ , C ₃ H ₆ , C ₂ H ₄ , NH ₃ , C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀ | Organics | <1 pptv | Yes | Non-DG |
| | | Metals | <1 ppbv | | |
| 502 | AsH ₃ , PH ₃ | H ₂ O, O ₂ | <1 ppb | No | Non-DG |
| | | Metals | <1 ppbv | | |
| 503 | H ₂ with up to 1% O ₂ ; O ₂ with up to 2% H ₂ | H ₂ in O ₂ , or O ₂ in H ₂ | <1 ppmv | No | Non-DG |
| 602 | CO | H ₂ O, O ₂ , CO ₂ , acids, bases, organics, refractories compounds, metals | <1 ppbv | No | DG – UN3089 Class 4.1 |
| 702 | NH ₃ , C ₂ H ₇ N, C ₂ H ₈ N ₂ , C ₂ H ₄ , C ₃ H ₆ , CH ₃ SiH ₃ , GeH ₄ , SF ₆ , SiH ₄ , H ₂ /SiH ₄ mixtures | H ₂ O, O ₂ , CO ₂ , NMHCs, metals | <1 ppb | Yes | DG – UN3089 Class 4.1 |
| 804 | CO ₂ | H ₂ O, O ₂ , CO, H ₂ | <100 ppt | Yes | DG – UN2881 Class 4.2 |
| | | Volatile acids, organics, refractory compounds | <1 ppt | | |
| | | Volatile bases | <5 ppt | | |
| | | Metals | <1 ppbv | | |

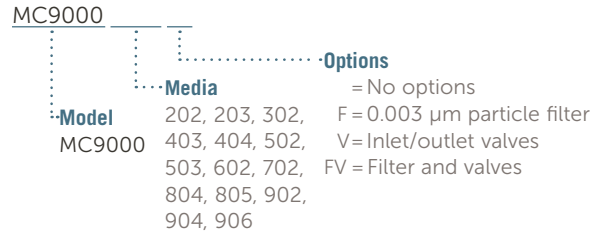
| Media | Gases Purified | Impurities Removed | Outlet Performance | Regenerable | Dangerous Goods (DG) Classification |
|-------|---|---|--------------------|-------------|-------------------------------------|
| 805 | CO ₂ | H ₂ O | <100 ppt | Yes | Non-DG |
| | | Volatile acids, organics, refractory compounds | <1 ppt | | |
| | | Volatile bases | <5 ppt | | |
| | | Metals | <1 ppbv | | |
| 902 | N ₂ , Ar, He, Kr, Ne, Xe, CH ₄ , C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀ , SF ₆ , fluorocarbons | H ₂ O, O ₂ , CO, CO ₂ , H ₂ | <100 ppt | Yes | DG – UN2881 Class 4.2 |
| | | Volatile acids, organics, refractory compounds | <1 ppt | | |
| | | Volatile bases | <5 ppt | | |
| | | Metals | <1 ppbv | | |
| 904 | H ₂ , D ₂ , H ₂ -Inerts mix | H ₂ O, O ₂ , CO, CO ₂ | <100 ppt | Yes | DG – UN2881 Class 4.2 |
| | | Volatile acids, organics, refractory compounds | <1 ppt | | |
| | | Volatile bases | <5 ppt | | |
| | | Metals | <1 ppbv | | |
| 906 | CDA, O ₂ , N ₂ O | H ₂ O, CO, CO ₂ , NMHC | <1 ppb | Yes | Non-DG |
| | | Metals | <1 ppbv | | |

*NMHCs = organics (C>4); volatile acids are compounds including SO₂, NO_x, HCl, H₂S, etc; volatile bases are basic compounds including NH₃ and amines; refractory compounds are hydrocarbons with etheroatoms such as Si, Halogens, P, B, S, or metals.

OTHER SIZES AVAILABLE

| Model number | Maximum flow | Average flow |
|--------------|--------------|--------------|
| MC1 | 5 slpm | 0.5 slpm |
| MC50 | 10 slpm | 1.5 slpm |
| MC190 | 50 slpm | 5 slpm |
| MC200 | 50 slpm | 5 slpm |
| MC400 | 60 slpm | 9 slpm |
| MC450 | 75 slpm | 10 slpm |
| MC500 | 100 slpm | 12 slpm |
| MC700 | 120 slpm | 25 slpm |
| MC1500 | 250 slpm | 40 slpm |
| MC2525 | 300 slpm | 80 slpm |
| MC2550 | 500 slpm | 80 slpm |
| MC3000 | 500 slpm | 80 slpm |
| MC4500 | 1000 slpm | 200 slpm |
| MC9000 | 1000 slpm | 300 slpm |

ORDERING INFORMATION



Example: MC9000-902F

Model: MC9000

Media: 902

Options: 0.003 µm particle filter

FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit entegris.com and select the [Contact Us](#) link to find the customer service center nearest you.

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