

GS-1 Respirable Dust Cyclone

Equivalent Design to 10-mm Nylon Cyclone Without Static Concerns

► Use at 1.7 or 2 L/min with DPM Cassette for MSHA DPM compliance sampling

- Screens out large particles to prevent DPM Cassette impactor and filter overload

► 2 L/min flow rate provides sharp size selection at 4 µm

- Meets ISO 7708/CEN criteria and OSHA and MSHA Final Silica Rules; suitable for ACGIH respirable TLVs

► Conductive plastic construction

- Eliminates electrostatic effects experienced with the 10-mm nylon cyclone
- Not a spark hazard for underground mine use



Sample Time:	Varies
Sample Rate:	1.7 or 2 L/min with DPM cassette (MSHA DPM sampling) 2 L/min for 4-µm cut-point (OSHA and MSHA Final Silica Rules)
Sample Pump:	Universal XR or AirChek Series
Sample Media:	DPM Cassette or 37-mm filters in 3-piece cassettes
Tubing:	1/4-inch ID

The 10-mm SKC GS-1 Cyclone is used with a 25 or 37-mm three-piece cassette with filter for collecting respirable dust particles. A removable cassette adapter is available in 25 or 37-mm diameter to hold a filter cassette securely during sampling. The GS-1 Cyclone is ideal for use with the SKC DPM Cassette for MSHA DPM compliance sampling. *See box at right.*

The conductive plastic GS-1 Cyclone provides sampling efficiency equivalent to the non-conductive 10-mm nylon cyclone used for respirable dust collection while eliminating static effects and providing for safe use underground.

Using the GS-1 Cyclone with the SKC DPM Cassette

Use the GS-1 Cyclone with the SKC DPM Cassette at 1.7 to 2 L/min for sampling in atmospheres where it is necessary to differentiate diesel particulate matter from other respirable dust (such as coal dust) based on particle size. The GS-1 Cyclone prevents particles > 4 microns from clogging the DPM Cassette's built-in submicron impactor that screens out particles ≥ 1 micron. Particles < 1 micron collect on a heat-treated quartz filter inside the cassette.

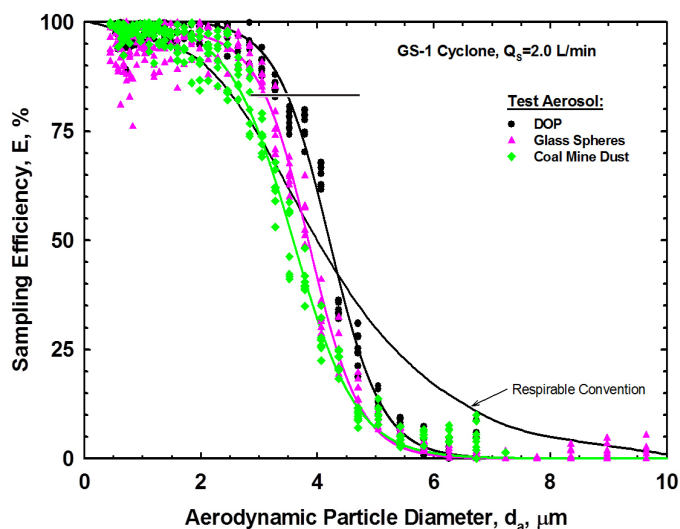


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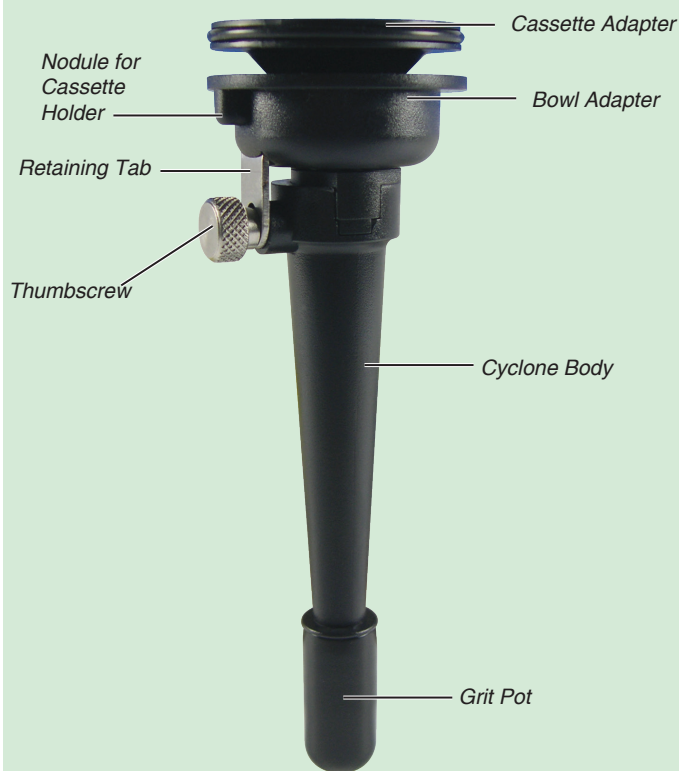
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GS-1 Performance for Respirable Dust Sampling to Meet ISO 7708/CEN Criteria

The GS-1 Cyclone conforms to the ISO 7708/CEN criteria for particle size selection with a 50% cut-point of 4 μm at 2 L/min (bias within ISO/OSHA/NIOSH requirements). It may be used at other flow rates to achieve cut-points for alternate applications.



Collection efficiency relative to ISO 7708/CEN criteria



GS-1 Cyclone

Ordering Information

Description	Cat. No.
GS-1 Single-inlet Cyclone with bowl adapter, 37-mm cassette adapter, and grit pot	225-105
Accessories	
Replacement Cassette Adapter	
37 mm (supplied with cyclone)	225-102
25 mm	225-101
Filter Cassette/Cyclone Holder , for attaching a DPM or standard filter cassette to a worker's clothing in the breathing zone. May be used with or without a cyclone, required when using DPM Cassette with GS-1 Cyclone	225-1
Multi-purpose Calibration Jar	225-111
Replacement Grit Pots , pk/25	P225012

References

Kar, K. and Gautam, M., "Orientation Bias of the Isolated 10-mm Nylon Cyclone at Low Stream Velocity," *AIHA Journal*, Vol. 56, 1995, pp. 1090-1098, <http://doi.org/bdjmrv>

OSHA Final Silica Rule, 29 CFR 1926.1153, 81 FR 16875-16882, March 25, 2016; 84 FR 21597, May 14, 2019, <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1153>

Dept. of Labor Mine Safety and Health Administration 30 CFR Parts 56, 57, 60, 70, 71, 72, 75, and 90, Docket No. MSHA-2023-0001 [RIN 1219-AB36 MSHA Silica Rule: Lowering Miners' Exposure to Respirable Crystalline Silica and Improving Respiratory Protection, <https://bit.ly/3Q6j4fl>

SKC Respirable Dust Cyclone Performance Guide, <https://bit.ly/4hmJhCC>