



Respirable Disposable Parallel Particle Impactors (PPIs)

Listed in OSHA and MSHA Final Silica Rules



KEY FEATURES

- Collection efficiency precisely matches ISO 7708/CEN criteria adopted in the OSHA and MSHA final silica rules
- Anti-static plastic
- Single use means no cleaning or two-way shipping costs!
- Not orientation sensitive – eliminates the tipping sample invalidation experienced with cyclones
- Selection of flow rates available to meet specific applications
 - **8 L/min PPI:** Enhances sensitivity (for short-term and/or low concentration sampling) using high flow pumps; ideal for lower OSHA PEL for silica
 - **4 L/min PPI:** Enhances sensitivity and can be used with personal pumps; TWA sampling for ≥ 4 hours; ideal for lower OSHA and MSHA PEL for silica
 - **2 L/min PPI:** 8-hour TWA sampling; ideal for new OSHA and MSHA PEL for silica
- Disposable PPI Sampler Options
 - All Disposable PPI Samplers are supplied preloaded with pre-oiled impaction substrates in the inlet section.
 - **Lab or user-loaded** The lab or user selects a filter, purchased separately, and loads it into the PPI Sampler
 - **Preloaded** with filter by SKC; requires preweighing
 - **Preloaded, preweighed** filter by SKC - ready to use
- Reusable aluminum and thoracic PPI models are available! Visit www.skcinco.com/ppi-sampler



Both OSHA and MSHA Final Silica Rules require exposure sampling to be performed with respirable dust samplers that conform to ISO 7708/CEN criteria. SKC PPI Samplers provide the closest match to the ISO 7708/CEN respirable criteria and are listed in both the OSHA Final Silica Rule (page 16439) and the MSHA Final Silica Rule (page 28331) as examples of samplers that conform to that criteria and meet requirements. PPI Sampler performance data relative to the ISO 7708/CEN criteria is published in the Journal of Physics, Conference Series 151, 2009.

How SKC PPI Samplers Work

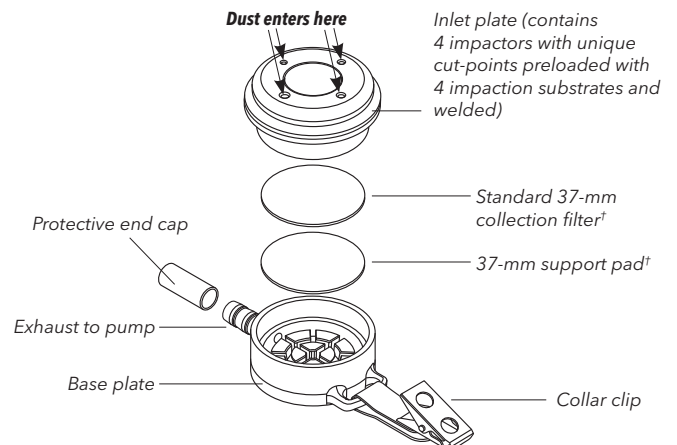
Only the SKC PPI Samplers contain four small impactors in the inlet section of the device. Each impactor features a unique 50% cut-point to target a specific one-quarter segment of the ISO 7708/CEN curve resulting in a precise fit along the entire curve. A sample pump pulls air through the inlet nozzle of each impactor in the inlet plate. Particles larger than each impactor's 50% cut-point are scrubbed and retained on the porous oiled impaction substrate, while smaller particles continue to the standard 37-mm collection filter for analysis.

The Disposable PPI Advantage

- Single-use eliminates cleaning and two-way shipping costs
- Tough, small, and light weight, PPIs provide worker comfort, even under helmets or other PPE
- Choice of flow rates for maximum flexibility in pump options, sample duration, and contaminant concentration
- Preweighed option is ready to use – no assembly required and is ideal for silica and total dust analysis

PPI Samplers Listed in OSHA and MSHA Final Silica Rules

To better protect workers in construction and general industry, OSHA put into effect a Final Silica Rule in 2016. MSHA published its Final Silica Rule on April 18, 2024, to reduce miner exposure to respirable crystalline silica (RCS). These regulations provide for an RCS permissible exposure limit (PEL) of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for a full shift (calculated as an 8-hour time-weighted average or TWA) and establish an Action Level for RCS at $25 \mu\text{g}/\text{m}^3$ for a full shift (calculated as an 8-hour time TWA). Both OSHA and MSHA rules require employers to evaluate the exposure of each employee who is, or could reasonably be expected to be, exposed to RCS. Assessment options are spelled out in each regulation. Visit <https://bit.ly/3UkJA8C> for the OSHA Final Silica Rule and <https://bit.ly/3Q6j4fI> for the MSHA Final Silica Rule.



[†] User-installed on non-preloaded PPIs; available already installed in preloaded PPIs. See ordering information.



SCIENCE. SERVING PEOPLE.®

www.skcinco.com | The Leader in Sampling Solutions and Expertise for OEHS Professionals

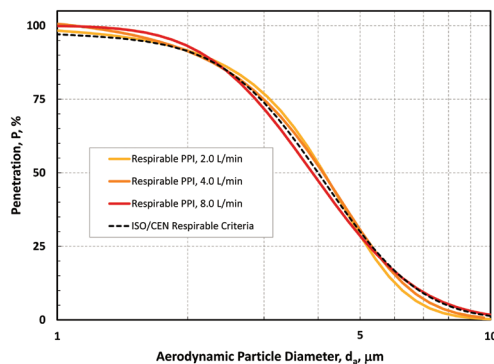
More information



2 | Disposable Parallel Particle Impactors (PPIs)

SKC PPI Performance

SKC PPI models were evaluated for their performance against the ISO 7708/CEN respirable convention. Potassium sodium tartrate (PST), dioctyl phthalate (DP), glass spheres (GS), and coal mine dust were used as test aerosol. A load of approximately 6.8 mg of coal mine dust on the PPI substrates did not adversely affect PPI performance. See [Cyclone vs. PPI Comparison](#) for more performance information.



Comparison of PPI Samplers' performance with the ISO 7708/CEN respirable convention

PERFORMANCE PROFILE

Sampling Rate	• 2, 4, or 8 L/min respirable
Sample Pump	• AirChek® Touch Series for 2 and 4 L/min • Leland Legacy® for 8 L/min
Sample Media	• 37-mm filter, preloaded PPIs available with 5.0- μm PVC or 1.0- μm PTFE (no support); user loaded models can be loaded with 5.0- μm PVC or 0.8- μm MCE depending on method or application. Prewighted models are available with 5.0 μm PVC filter preweighed to 5 decimals
Tubing	• 1/4-inch ID tubing
Impaction Substrate	• Four 3/8-in diameter pre-oiled porous plastic discs (preloaded in all Disposable PPIs)
Analysis	• Gravimetric or chemical
Body Material	• Conductive ABS plastic
Dimensions	• Height (clip to exhaust): 4.25 in (10.8 cm) • Diameter: 1.8 in (4.6 cm) • Depth: 1.2 in (3.0 cm)
Weight	• 1.1 oz (31.2 gm)
Shelf-life	• 18 mos from date of manufacture (based on preloaded impaction substrate)

ORDERING

Preloaded Available as Cat. No.

225-3841#	Respirable PPI (red), 8 L/min, 5.0- μm PVC Filter
225-3871#	Respirable PPI (orange), 4 L/min, 5.0- μm PVC Filter
225-3851#	Respirable PPI (gold), 2 L/min, 5.0- μm PVC Filter
225-3852#	Respirable PPI (gold), 2 L/min, 1.0- μm PTFE filter, no support

Preloaded with Prewighted Filter Available as Cat. No.

225-3841-PW#	Respirable PPI (red), 8 L/min, 5.0- μm PVC Filter, preweighed to 5 decimals
225-3871-PW#	Respirable PPI (orange), 4 L/min, 5.0- μm PVC Filter, preweighed to 5 decimals
225-3851-PW#	Respirable PPI (gold), 2 L/min, 5.0- μm PVC Filter, preweighed to 5 decimals

User-loaded Available as Cat. No. (requires filters sold separately)

225-384#	Respirable PPI (red), 8 L/min
225-387#	Respirable PPI (orange), 4 L/min
225-385#	Respirable PPI (gold), 2 L/min

#Designed for one-time use



For details, bulk packs, and additional accessories, visit www.skccinc.com/ppi-sampler

Recommended Accessories

225-389	Calibration Adapter for Disposable PPI Samplers
---------	---

RESOURCES

[Top 3 Reasons to Choose PPI \(PDF\)](#)

[Cyclone vs. PPI Comparison \(PDF\)](#)

MSHA Final Silica Rule, <https://bit.ly/3Q6j4fl>

OSHA Final Silica Rule on Respirable Crystalline Silica, www.osha.gov/silica/

SKC WebIH Webinar: MSHA's Final Silica Rule-Navigating Update and Implications

Mainelis, G. and Han, T., "Performance characteristics of respirable parallel particle impactors (PPI)," *Journal of Occup. and Env. Hygiene*, 18 Jul 2025, <https://doi.org/pw4v>

Stacey, P., Thorpe A, and Echt, A., "Performance of High Flow Rate Personal Respirable Samplers When Challenged with Mineral Aerosols of Different Particle Size Distributions," *Ann. Occup. Hyg.*, 60, 2016, pp. 479-492, <http://dx.doi.org/10.1093/annhyg/mev097>

Trakumas, S., Salter, E., "Parallel Particle Impactor - Novel Size-selective Particle Sampler for Accurate Fractioning of Inhalable Particles," *Journal of Physics: Conference Series* 151 (2009), 16pp., 012060, doi:10.1088/1742-6596/151/1/012060