

# Crystalline Silica Sampling

## Cyclones vs PPI Samplers – Making the Optimal Choice






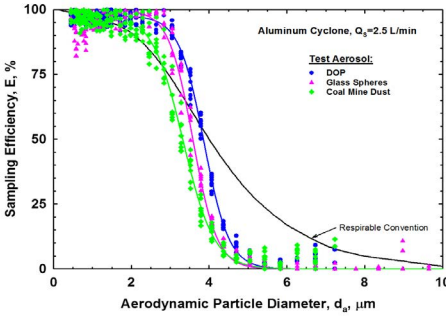
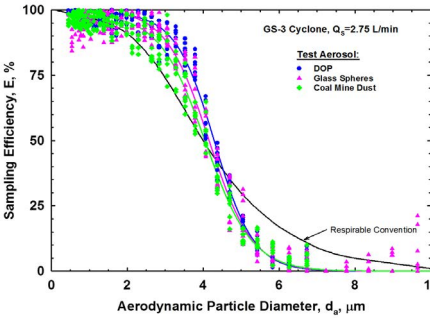
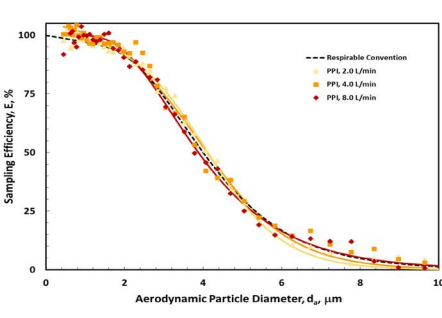
**SCIENCE.  
SERVING PEOPLE.**

There are more choices in respirable dust samplers available now than ever before.

**Traditional cyclone samplers**, such as the SKC Aluminum Cyclone and GS-3 Cyclone, function on the principle of centrifugal force. The rapid air circulation separates particles according to equivalent aerodynamic diameter with respirable size particles collecting on a filter in a cassette on the cyclone while larger particles fall into the cyclone's grit pot.

**SKC Parallel Particle Impactor or PPI Samplers** are impaction based. A PPI Sampler comprises four separate miniature impactors arranged in parallel, each with a different cut-point keyed to a specific location along the ISO 7708/CEN curve. Respirable particles collect on a filter inside the sampler while larger particles are retained on built-in pre-oiled impaction substrate.

Aside from operating principles, PPI Samplers differ from cyclones in several important aspects including precision, accuracy, convenience, and worker acceptance. See below for details to aid you in making the optimal choice for your application.

FLOW RATE FOR SIZE SELECTION AT 4-MICRON CUT-POINT		
 <p><b>2.5 L/min</b> <b>SKC Aluminum Cyclone</b> Cat Nos. 225-01-01, -01-02</p>	 <p><b>2.75 L/min</b> <b>SKC GS-3 Cyclone</b> Cat Nos. 225-100, -103</p>	 <p><b>2, 4, or 8 L/min</b> <b>SKC PPI Samplers</b> Cat Nos. 225-384, -385, -387</p>
COLLECTION EFFICIENCY (relative to the ISO 7708/CEN criteria in the OSHA and MSHA Final Silica Rules and ACGIH® TLV®s)		
 <p>Aluminum Cyclone, <math>Q_c=2.5</math> L/min</p> <p>Test Aerosol:          ● DOP          ▲ Glass Spheres          ● Coal Mine Dust</p> <p>Respirable Convention</p>	 <p>GS-3 Cyclone, <math>Q_c=2.75</math> L/min</p> <p>Test Aerosol:          ● DOP          ▲ Glass Spheres          ● Coal Mine Dust</p> <p>Respirable Convention</p>	 <p>Respirable Convention          ● PPI 2.0 L/min          ● PPI 4.0 L/min          ● PPI 8.0 L/min</p>
SAMPLER CHARACTERISTICS		
<ul style="list-style-type: none"> <li>• Conductive aluminum</li> <li>• Reusable</li> <li>• Meets ISO 7708/CEN criteria; listed in OSHA and MSHA Final Silica Rules and NIOSH methods; suitable for ACGIH respirable TLVs</li> <li>• Operates on centrifugal force</li> <li>• Cleaning and assembly required</li> <li>• Sensitive to orientation (tipping)</li> </ul>	<ul style="list-style-type: none"> <li>• Conductive plastic</li> <li>• Reusable</li> <li>• Meets ISO 7708/CEN criteria in OSHA Silica Rule criteria; suitable for ACGIH respirable TLVs</li> <li>• Operates on centrifugal force</li> <li>• Unique design overcomes disadvantages of 10-mm nylon cyclone</li> <li>• Cleaning and assembly required</li> <li>• Sensitive to orientation (tipping)</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-static plastic</li> <li>• Disposable (reusable models are available)</li> <li>• Provides most precise match to the entire ISO 7708/CEN criteria; listed in OSHA and MSHA Final Silica Rules; suitable for ACGIH respirable TLVs</li> <li>• Impaction-based</li> <li>• Precise size selection at three different flow rates, ideal for multiple applications</li> <li>• No cleaning needed</li> <li>• Available preloaded and preweighed</li> <li>• No tipping hazard</li> <li>• Compact, lightweight—greater worker acceptance</li> </ul>
LEARN MORE		
<p><a href="https://www.skinc.com/products/aluminum-respirable-dust-cyclone-37-mm">https://www.skinc.com/products/aluminum-respirable-dust-cyclone-37-mm</a></p>	<p><a href="http://www.skinc.com/products/gs-3-conductive-plastic-respirable-dust-cyclone-37-mm">www.skinc.com/products/gs-3-conductive-plastic-respirable-dust-cyclone-37-mm</a></p>	<p><a href="http://www.skinc.com/ppi-sampler">www.skinc.com/ppi-sampler</a></p>