



Operating Instructions

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DPM Cassette with Precision-jeweled Impactor Catalog No. 225-317

The SKC DPM Cassette is designed for sampling in atmospheres where it is necessary to differentiate diesel particulate matter (DPM) from other respirable dust based on particle size. This differentiation is performed using a specially designed precision-jeweled impactor built into the cassette.

Designed for one-time use, the SKC DPM Cassette is sealed to ensure sample integrity. Loaded into each streamlined plastic cassette is a precision-jeweled impactor, impaction substrate, a heat-treated quartz filter for sample collection, and a second quartz filter to be used as a blank. The precision-jeweled impactor screens out respirable particles $\geq 1.0 \mu\text{m}$. Particles less than $1.0 \mu\text{m}$ are collected on the filter.

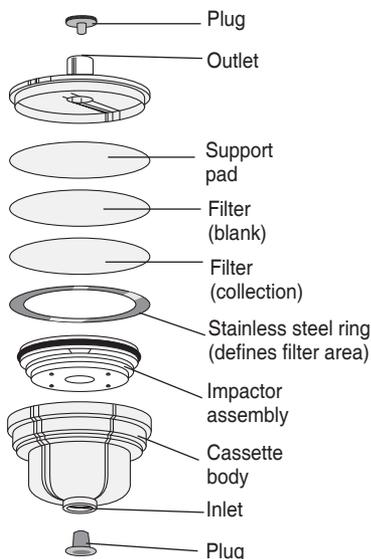


Figure 1. Exploded view of
DPM Cassette
(Cat. No. 225-317)

Specifications

Cassette size:	37 mm
Filter:	Two heat-treated quartz fiber with cellulose support pad
Filter collection area:	8.04 cm ²
Impactor:	Four-nozzle, precision-jeweled
Flow rate:	Calibrated at 1.7 and 2.0 L/min for sampling of sub-micron particles

Sampling Equipment

The SKC DPM Cassette is designed for use with an appropriate sample pump and cyclone that pre-selects the non-respirable particles*. An SKC Universal PCXR or AirChek® 2000 sample pump can provide the specified flow rate. Use the SKC Cassette/Cyclone Holder (Cat. No. 225-1) to secure the cassette when used with the GS-1 Cyclone.

* A cyclone is not necessary in all sampling situations. It should be used in settings where carbonate particles or larger particulate that can clog the impactor are liable to be sampled.

Setting up the Sampling Train with Cyclone and Holder

1. Remove thumb screw from cyclone.
2. Place bowl adapter over cyclone top and orient hole in retaining tab with threaded boss in cyclone body.
3. Reinsert and tighten thumb screw.
4. Insert stem of cyclone into large hole in cassette holder.
5. Orient cyclone in holder until the small round nodule on the bowl adapter rim fits into the notch in the cassette holder.
6. Remove inlet and outlet plugs from a DPM Cassette, pull back spring-loaded hold-down plate on cassette holder, and gently push inlet of cassette onto top of cyclone.
7. Position small hole in hold-down plate over cassette outlet.
8. Insert adapter on rubber tubing through the hold-down plate and into cassette outlet.

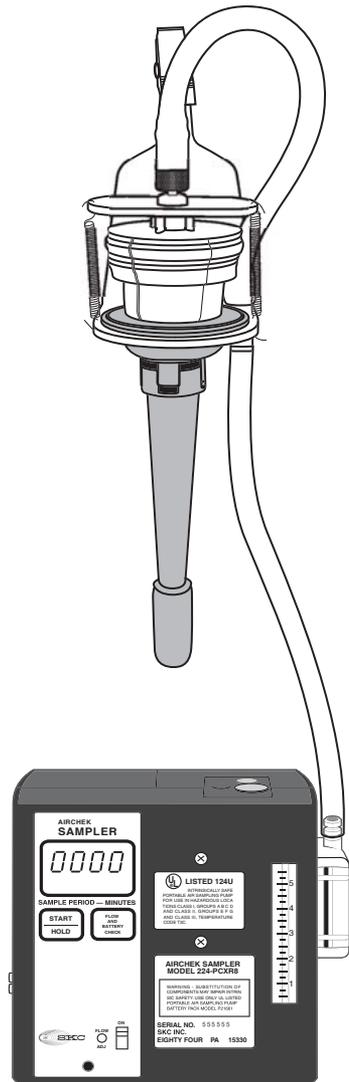


Figure 2. DPM Sampling Train with Cyclone and Holder

Setting up the Sampling Train without a Cyclone

1. Remove the plug from the outlet of the cassette (Figure 1).
2. Attach one end of a length of Tygon tubing to the cassette outlet and the other end to the inlet of an air sample pump capable of maintaining the desired flow rate.
3. Secure the cassette on a worker by using a cable tie and collar clip.
4. Remove plug from the cassette inlet immediately before sampling.

Sampling

1. Calibrate pump flow rate according to the pump operating instructions.

Note: Do **not** use filter cassette holder during calibration.

2. Replace representative cassette with a fresh cassette and insert assembly into the holder.
3. Sample for the appropriate time.
4. When sampling is completed, turn off the pump, remove the cassette and cyclone from the holder, remove the cassette from the cyclone, and immediately plug both the inlet and outlet of the cassette with the provided plugs.

Shipping

1. Package the cassettes for shipment to a laboratory for analysis. It is not necessary to send a blank. The DPM Cassette contains a built-in blank.

Analysis

Total carbon represents more than 80% of DPM particulate emissions. NIOSH Method 5040 can be used to quantitatively determine the total carbon (organic and elemental) content of the sample.

Ordering Information

Description	Cat. No.
SKC DPM Cassette with precision-jeweled impactor , contains sub-micron impactor and two heat-treated quartz filters; sealed with tamper-evident tape, pk/10 <i>Limited shelf-life</i>	225-317
SKC GS-1 Cyclone* , includes bowl adapter and 37-mm cassette adapter	225-105*
SKC Cassette/Cyclone Holder	
<i>Required when using DPM Cassette with GS-1 Cyclone.</i>	225-1
Multi-purpose Calibration Jar	225-111

* *A cyclone is not necessary in all sampling situations. It should be used in settings where carbonate particles or larger particulate that can clog the impactor are liable to be sampled.*

Notice: This operating instruction may not address all safety concerns (if any) associated with this product and its use. The user is responsible for determining and following the appropriate safety and health practices and regulatory limitations (if any) before using the product. The information contained in this document should not be construed as legal advice, opinion, or as a final authority on legal or regulatory procedures.