

## Sampling Solutions for Asthma Studies

### Introduction

Asthma is a major occupational and public health concern. This lung disease can be caused by exposure to vapours and particulate contaminants in dusts, fumes, mists, and smoke. The chemical composition, mass concentration, and particle size of particulate contaminants determine the ultimate effects of exposure on health, so the sampling method used must provide information about each of these factors.<sup>1</sup>

SKC offers active and passive sampling solutions for evaluating target compounds in asthma studies. SKC active samplers require an air sample pump to collect hazardous gases, vapours, and particulates in air; passive samplers collect hazardous vapours by diffusion without the use of a sample pump.

Severe asthma attacks can result from workplace sensitisation and exposure to isocyanates. [See Sampling Solutions for Isocyanates](#)

<sup>1</sup> *White Paper: Size-selective Sampling for Particulates, SKC Publication 1205*

### SKC Sampling Solutions

For over 50 years, SKC has led the research, design, and manufacture of quality sampling equipment and media to aid health and safety professionals in the evaluation of occupational and environmental hazards.

SKC sampling solutions for asthma studies include air sample pumps, active and passive samplers, sorbent tubes, and filters following agency methods and established protocols.



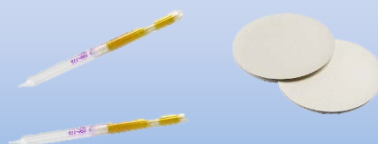
#### Air Sample Pumps



#### Samplers



#### Sampling Media



## Sample Collection

### Active Air Sampling Solutions

Depending on the method and application, SKC recommends the size-selective samplers and media below.

Target Compound	Select Methods*	SKC Sample Collection Media/Sampler and Part No.	SKC Sample Pump and Part No.	Notes
Formaldehyde	<a href="#">EPA IP-6</a>	Sorbent tube <a href="#">226-119</a> or <a href="#">226-120</a>	<a href="#">Pocket Pump TOUCH</a> 220-1000TC	226-120 is used in the presence of ozone
PM10 PM2.5	<a href="#">EPA IP-10A</a>	PTFE filter <a href="#">225-1709</a> with Personal Environment Monitor (PEM) <a href="#">761 Series</a> . Flow rate determines pump recommended. <i>See below:</i> 2 or 4 L/min PEM		Single-stage Impactor. Select model for desired PM size and flow rate.
		10 L/min PEM	<a href="#">AirChek TOUCH</a> 220-5000TC	
		Sioutas Impactor <a href="#">225-370</a> with four PTFE collection substrates <a href="#">225-3708</a> and an optional PTFE after-filter <a href="#">225-1709</a>	<a href="#">Leland Legacy</a> 100-3002	Multi-stage impactor with a designated flow rate of 9 L/min
	<a href="#">EPA IP-10A</a> equivalent samplers	PTFE filter <a href="#">225-1709</a> or quartz filter <a href="#">225-1822</a> with Personal Modular Impactor (PMI) <a href="#">225-350</a> or <a href="#">225-352</a>	<a href="#">AirChek TOUCH</a> 220-5000TC	Single-stage impactor with a designated flow rate of 3 L/min. Choose model for desired PM size. <i>Requires <a href="#">225-355</a> impaction substrates.</i>
	<a href="#">EPA IP-10A</a> equivalent samplers	PTFE filter <a href="#">225-1747</a> or quartz filter <a href="#">225-1823</a> with IMPACT Sampler <a href="#">225-390</a> or <a href="#">225-392</a>	<a href="#">Leland Legacy</a> 100-3002	Single-stage impactor with a designated flow rate of 10 L/min. Choose model for desired PM size. <i>Requires <a href="#">225-395</a> impaction substrates.</i>

\* Other methods may apply. SKC recommends those listed.

### Passive Air Sampling Solutions

Target Compound	Select Methods*/ SKC Validation	SKC Sample Collection Media/Sampler and Part No.	Notes
Formaldehyde	<a href="#">EPA IP-6C OSHA 1007</a> /Research Reports <a href="#">1608</a> and <a href="#">1661</a>	UME <sup>x</sup> 100 <a href="#">500-100</a>	HPLC analysis
Organic vapours	<a href="#">EPA TO-17</a> /Research Report <a href="#">1812</a>	ULTRA <sup>®</sup> <a href="#">690 Series</a>	Thermal desorption and GC analysis

\* Other methods may apply. SKC recommends those listed.