



Sampling Equipment Specialists

Air-O-Cell® CSI

Air-O-Cell® CSI universal optical and SEM particle analysis



As the leader in air sampling cassette technology, Zefon International has developed the Air-O-Cell Collector for SEM Identification (CSI) that allows for analysis by both optical and scanning electron microscopy (SEM) on the exact same air sample. Like never before, the unique Air-O-Cell CSI media brings the advantages and precision of SEM particle analysis to indoor air quality investigations.

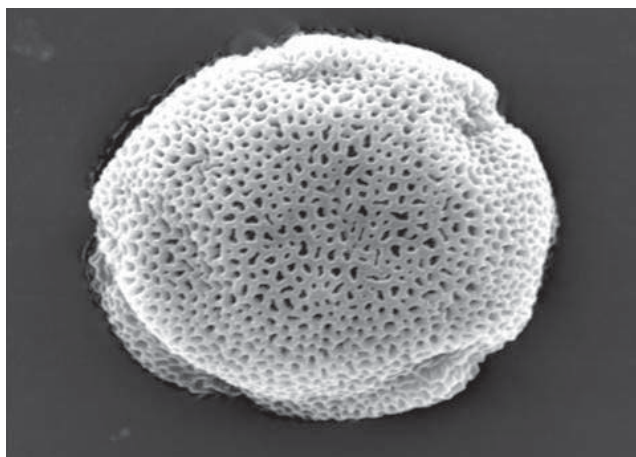
The new Air-O-Cell CSI has significant advantages over the existing Air-O-Cell media and all other collection devices:

- The sample can be examined and re-examined by both optical and electron microscopy in any order without significant particle loss or complex sample preparation.
- The high chemical stability, clarity, and ultra-smooth surface of the collection media enables a wide range of chemical, microbiological, and elemental analysis

Examples of Sample Analysis



Optical Microscopy Image ~800x



Scanning Electron Microscopy Image (Pollen grain) ~3050x

techniques to be employed using both optical and electron microscopy analysis.

- The unique low carbon X-ray background is specifically designed to enable the differentiation of common carbon containing indoor air quality particles (soot, rubber particles, fibers, etc.) in addition to inorganic contaminants.

Universal Microscopy Analysis

The high optical clarity, smooth surface, and low carbon X-ray back-ground of the CSI media combine to provide both superior optical and electron beam image quality. The unique chemical resistance and low volatility of the media allows biological staining and optical analysis, and then re-analysis by electron microscopy. By using the slide preparation procedure on the back page you can achieve comprehensive and cost effective forensic dust and indoor air quality particle analysis.

PRODUCT	DESCRIPTION	Quantity	PRICE
CSI010	Air-O-Cell CSI	box of 10 cassettes	\$ 95.00

Zefon International
5350 SW 1st Lane • Ocala, FL 34474 USA
Tel: +1 352-285-8080 • www.zefon.com

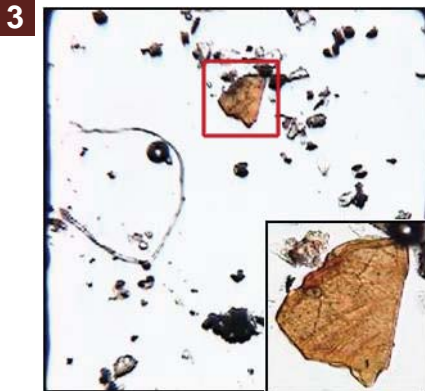
Air-O-Cell[®] CSI slide preparation for combined optical and scanning electron microscopy



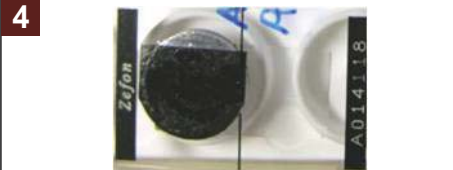
1. Air-O-Cell CSI sample collection method is virtually identical to Air-O-Cell.



2. Remove the CSI coverslip from the cassette and mount on a microscope slide with the particle collection side facing up. Place a section of screen mesh or a TEM finder grid directly over one side of the sample trace if direct comparison analysis is desired. Apply stain and a coverslip and analyze the slide according to normal optical microscopy procedures.

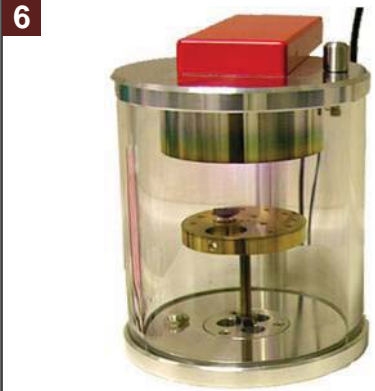


3. Identify particles of interest within pre-identified areas. Take both low and high magnification photographs for comparison with the SEM analysis.



4. Remove the CSI coverslip and slowly rinse the stain or optical coupling agent off the slide with deionized water. Use a final rinse of 50% isopropyl alcohol, and lightly blow off the excess alcohol with a dusting spray. Dry the coverslip on a warming place at less than 150°F.

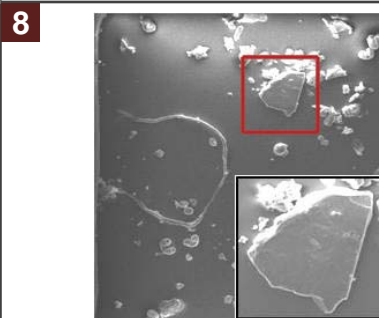
5. Place the slide onto an SEM specimen mount and adhere with silver or carbon conductive paint.



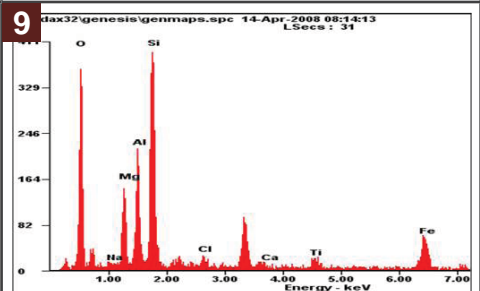
6. Evaporate a thin layer of gold using a sputter coater. 30 ma for 30 seconds at a working distance of approximately 5 cm is sufficient.



7. Place the sample into the SEM and relocate and analyze the particles of interest.



8. Collect SEM micrographs of representative particles of interest for comparison with the optical microscopy analysis.



9. Collect dispersive X-ray spectra of representative particles of interest to determine elemental composition and particle identification.



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Ocala, FL 34474 USA
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