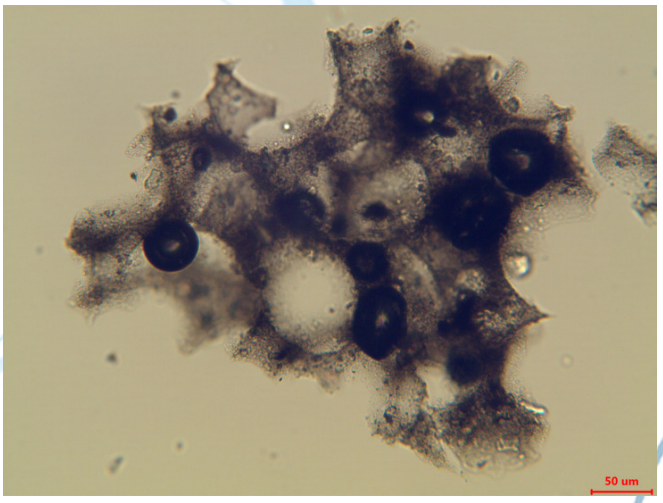
MICROVISION
LABORATORIES, INC.

Black Dust in an Office

Problem:
A client with a small professional office called with a concern from their employees who were noting black dust beginning to aggregate in some of the rooms. The employees knew there were recent problems with mold, and they were concerned that the black dust could be mold related.

Approach:
In discussion with the staff at MicroVision Labs, the client explained that a tenant on a higher floor of their building had suffered a water leak that ran down into the client's space. A significant amount of building material had been replaced, the space had been repeatedly heat dried and checked, and the mold remediation company hired by the insurance agency had tested and found no sign of active mold in the space, however, the black dust persisted.

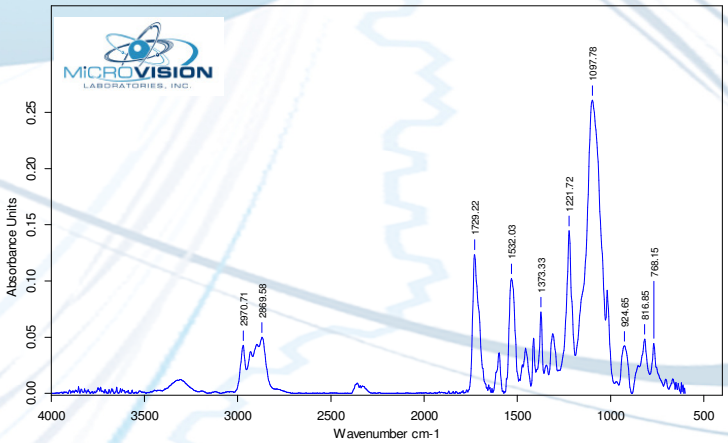
Analysis and Results:
Examining the sample with a polarized light microscope (PLM), it was darker and coarser than expected for a mold sample. The dust appeared to be a closed cell, synthetic blown foam material, and all from the same source. The black color was likely due to pigment particles added to color the foam.



PLM Image

Fourier Transform Infra-Red spectroscopy was performed on the foam particles. The spectrum showed a mixture of spectral features, associated with vinyl acetates, polyurethane, and cellulose or other sugar-like polymers. Based on these features, a common urethane acetate foam was determined as the likely source material.

Conclusion:
The client was contacted with the results, and was curious as to what the source of these particles might be. After consulting with the office manager, it was determined that some pieces of furniture present had relatively significant amounts of direct water exposure, and were subsequently dried a number of times during remittance construction. Inspection of these pieces of furniture showed that they had high density, close packed foam cushions of a type similar to the particles observed in the surrounding area, which had been broken down by the repeated wet/dry cycle.



FTIR Spectrum of Urethane Acetate Foam

The client was able to determine the source of the black dust was due to the mechanical breakdown of the foam cushions in the impacted room, and not from mold or mildew growth. The experienced analysts at MicroVision Labs were able to differentiate the foam materials from either blown cellulose or urethane foam insulation or air filters, allowing for the client to easily remove the problem cushions.