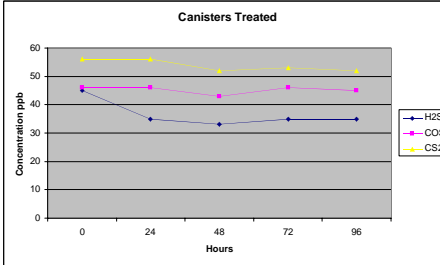
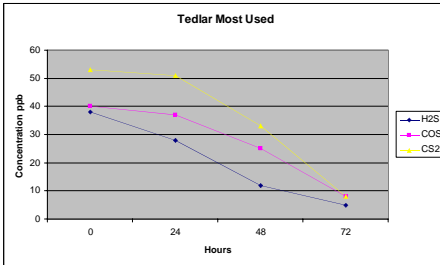
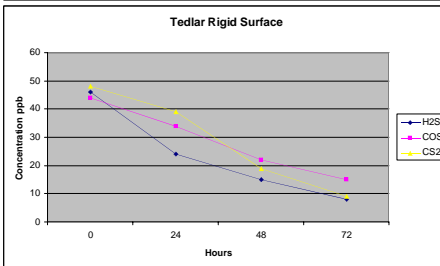
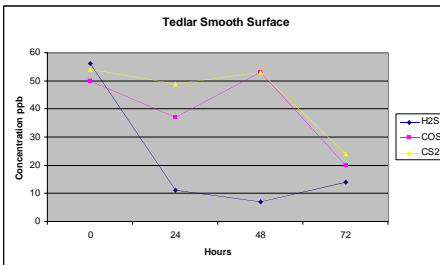


CHINESE DRYWALL: Air and Headspace Analysis; The Importance of Sampling Media and Environmental Conditions During Sampling and Analysis

Russell J. Pellegrino
Laboratory Director, Centek Laboratories, LLC
Russ@CentekLabs.com

143 Midler Park Dr.
Syracuse, NY 13206
www.CentekLabs.com



INDOOR AIR SAMPLING MEDIA Tedlar Bags -vs- Treated Canisters

What is the most accurate sampling media and why? The graphs on the left compare data from a number of different media used to sample sulfur compounds in air.

The tedlar bags and treated canister were spiked at 50 ppb. Over a period of time the media was analyzed to watch stability and reproducibility.

Data shows the pretreated quartz coated canister negates the sulfur compounds from adhering. Thus, making the canister media the most reliable media, relevant to detecting sulfur compounds in the matrix.

CONCLUSION

If you were to look at the tedlar media under a microscope, you would see that the surface is not smooth. In fact it would have tiny scratches throughout the material. I also know that sulfur compounds are very sticky. Sulfur compounds have a tendency to stick inside the tedlar bag because of active sites. Canisters with specially treated quartz coatings when examined under a microscope, show a surface that is very smooth, much like glass.



Headspace Analysis

PROGRESS OF RESEARCH TO BEST IDENTIFY SULFUR CONTAMINATION

- Analyze whole piece of drywall as is
- Increase surface area by pulverizing sample
- Subject sample to increased temperature
- Subject sample to increased humidity

CONCLUSION

I was able to produce the best results when subjecting drywall samples to increased surface area, temperature and humidity

Environmental Conditions



THEORY

Using what we know about sulfur compound collection and analysis, sampling media and environmental conditions play a huge role in being able to identify contamination in air and drywall products. It is my belief that analysis can be consistent if sampling and analysis are subjected to a stringent protocol.