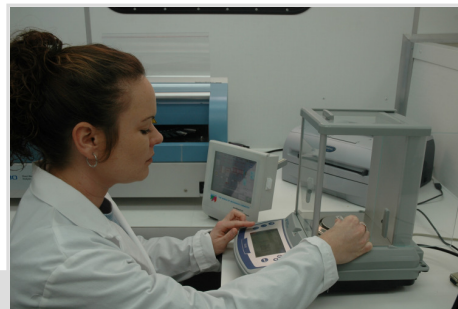


## 2010 EPA ICR Testing Tips

The recent EPA ICR testing requirements for the coal- and oil-fired electric utility industry can be challenging for stationary source testing firms, and we have provided the following tips so that your project runs a little smoother.

### Condensable Particulate Matter (OTM-028)

This is a new test method soon to replace EPA Method 202. It is a more complicated procedure than EPA 202 designed to reduce the sulfate artifact from the back-half particulate. It is typically paired with OTM-027 for 2.5 $\mu$ m filterable PM.



#### Sampling Tips:

- Be sure to incorporate a Field Blank run in your sampling plan. (This is not, however, a requirement for the front-half 027)
- Clean glassware and recovery techniques are crucial for this method

### FTIR (EPA Methods 318, 320, 321)

Fourier-Transform Infra-red Spectroscopy is an instrumental procedure capable of detecting many compounds simultaneously down to relatively low detection limits ( $\sim$  1ppm). It is typically used because of its significant advantage of producing real-time data. HF, HCl, formaldehyde and methane are some MACT-affected pollutants that can be easily tested by FTIR.



#### Sampling Tips:

- Try to determine the expected concentrations of analytes and potential interferences, particularly CO<sub>2</sub> and moisture prior to sampling
- For improved accuracy it is best to use calibration spectra obtained on the same instrument used for sampling rather than use library spectra

## Formaldehyde (SW-846 Method 0011 or EPA Method 323)

These two methods are very different from one another and each has its advantages and disadvantages. EPA 323 incorporates deionized water as a midget impinger solution and can be shipped non-hazardous. Method 0011 utilizes DNPH as an impinger solution which is corrosive, has a short (5 day) shelf life prior to sampling, and must be shipped hazardous. The advantage of EPA 0011 is that it speciates all aldehydes as well as ketones such as acetone and MEK. Each method also has its own interferences which the tester should be familiar with before sampling.



### Sampling Tips:

- EPA Method 323:
  - Maintain dual sampling probes as close to each other as possible when sampling for this method
  - Place these samples on ice immediately after sampling and keep in mind their 14 day holding period
- EPA Method 0011:
  - It is important to keep in mind the 5 day pre-test shelf life of the DNPH reagent when sampling for this method.
  - DNPH reagent also absorbs formaldehyde from ambient air very quickly so keep reagent bottles capped at all times

## HF, HCl Acid Gases (EPA Method 26/26A)

One of the original ion chromatography air quality methods, this procedure can also measure the halogen gases,  $\text{Cl}_2$  and  $\text{Br}_2$ , if alkaline impinger solutions are incorporated in the sampling train.



### Sampling Tips:

- When sampling for HF use plastic or Nalgene™ containers to recover into
- If chlorine or bromine is included in your test plan, it is important that your back impingers (impingers 3 and 4, 0.1 N NaOH) remain basic throughout the sampling run. High  $\text{SO}_2$  emissions can quickly neutralize NaOH

### **Hexavalent Chromium (EPA SW-846 Method 0061)**

This method measures chromium<sup>6+</sup> by metal-free ion chromatography paired with post-column reaction and visible wavelength detection.

### **HCN by EPA Conditional Test Method 033 (CTM-033)**

This method measures cyanide by ion chromatography utilizing electrochemical detection.



Typical turnaround for these analyses from most labs is 10 business days. If requested we can also provide quicker in-house turnaround times as well as on-site analysis. Typical turnaround for these analyses from most labs is 10 business days. If requested we can also provide quicker in-house turnaround times as well as on-site analysis. Check with us for pricing.