

Ensuring reliable and repeatable testing of BTEX compounds with SilcoNert® 2000



A SILCOTEK® CASE STUDY



“We believe in high quality design and engineering, and SilcoTek coatings allow us to turn over to the customer a product that is high quality, low maintenance, and reliable.”

*-Justin Smith
Technical Services Manager*

SUMMARY:

Smith Analytical's core mission is to deliver the best in analytical, instrument and electrical products, and service or training to their clients around the world. They engineer, design, and fabricate process analyzer sample systems and are famous for their consulting and training services. SilcoTek® is proud to work together with Smith Analytical to ensure they can provide their customer with a high quality and reliable analytical system.

CHALLENGES:

Smith Analytical was performing low level analysis of BTEX compounds in ambient air when they noticed direct calibrations to the analyzer versus up-stack calibrations showed roughly a 30% difference on certain components. BTEX refers to benzene, toluene, ethylbenzene, and xylene compounds which are commonly found in crude oil and vehicle emissions. Monitoring BTEX compounds is important because prolonged exposure at high levels can have adverse health effects; for example, benzene is a known carcinogen. Smith Analytical is in the business of ensuring accurate readings from their analyzer equipment, and when they realized that PTFE-coated stainless steel tubing would not work for them, they contacted SilcoTek.

HOW SILCOTEK HELPED:

To create a more reliable analysis, Smith reached out to SilcoTek and began using SilcoNert® 2000 coated 1/8” tubing for their equipment. This allowed for the bias to drop from around 30% to well below 5% between the direct calibrations and up-stack calibrations. The SilcoNert 2000 tubing in this particular instance gave them a more reliable, repeatable result at low detection levels.

GAME-CHANGING BENEFITS:

In this case, SilcoTek's game-changing inert properties allowed the bias between direct and up-stack calibrations to decrease by 6 times. This benefit means that Smith Analytical can provide their customers with more and better alternatives for reliability and repeatability. By using SilcoNert 2000 coated tubing in certain components, the accuracy they are able to achieve solidifies their reputation for high quality, process analyzer products, sample systems, analyzer field service and training.

The benefits of a reliable reading while measuring BTEX could be the difference between life and death in some cases. All compounds represented by BTEX are harmful to human health when exposed to repeatedly for an extended amount of time. Benzene can cause harmful effects to blood and bone marrow, toluene is a nervous system disruptor, ethylbenzene can cause respiratory problems, and xylene exposure is linked to fainting and irregular heartbeat. Accurate measurement of these compounds is very important for a variety of reasons, including human and environmental health.

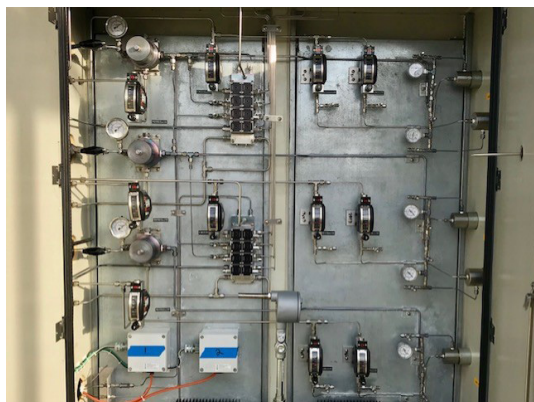


Fig. 1 Multi-stream GC Sample System



Fig. 2 Mass Spec Sample System



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