



Nitric Oxide Standards for Olefin Production Units

APPLICATION

Olefin Production Units require the recovery of hydrogen from product gases with a cryogenic separation unit (often referred to as a "cold box"). It is known these product gases contain oxides of nitrogen. Nitric Oxide (NO) is a very low-boiling compound and passes through the separation train with hydrogen, methane and other light hydrocarbons. Eventually the NO enters the cold box.

There have been reports of explosions in cryogenic processing units due to the presence of unstable nitrogen compounds (gums) formed from the reaction between trace amounts of nitrogen compounds and hydrocarbons accumulating over time. The gums formed at cryogenic conditions tend to be unstable compounds and are likely to be an explosion hazard.

The recommended solution is to accurately calibrate NO analyzers to low PPB levels and conduct an NO material balance around the cold box. The low PPB levels encountered require highly accurate and reliable calibration / validation standards for the analytical system. Permeation devices offer the best means of introducing low level PPB NO or NO_x standards and thus solve the problems associated with cryogenic recovery of hydrogen from product gases in the olefin production industry.

Kin-Tek Laboratories, Inc. manufactures permeation calibration / validation standards to simplify the use and introduction of NO and other oxides of nitrogen into analytical systems. Kin-Tek's calibration systems dynamically generate the NO compound and easily accomplish standard addition calibration / validation. Lower levels require more frequent validation, rendering permeation devices less expensive than static blends.

Trace Source Permeation Tubes and associated instrumentation are NIST traceable.

MTI Analytical Technology is available to assist with environmental and process monitoring applications. Design, engineering, fabrication, installation, and commissioning may be accomplished, thus assuring integrity and performance of component units.

MTI Analytical Technology Products

- Analyzers
- Calibration / Validation Standards
- Electrodes
- Electrochemical Sensors
- Emission Eliminators
- Packaged Analytical Systems
- Sample Handling / Conditioning Devices
- Software Documentation Systems for Analyzers
- Software for Continuous Emission Monitoring Reporting

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