

Fourier Transform Infrared Spectroscopy

FTIR Spectroscopy

ARI is a leader in using on-site Fourier Transform Infrared (FTIR) Spectroscopy for air pollutant analysis.

FTIR technology allows real-time on-site measurement to determine varying concentrations of specific criteria pollutants, hundreds of volatile organic compounds (VOCs) and over 120 hazardous air pollutants (HAPs) listed by the EPA.

FTIR spectroscopy can also measure combustion pollutants including formaldehyde, HCN, HCl, SO₂, NO_x, N₂O, CO₂ and CO.

ARI frequently monitors nickel carbonyl, VOC and CO concentrations during reactor turnarounds at refineries.

ARI uses MKS Instruments, Inc. MultiGas FTIRs and software.

ARI is performing FTIR test programs at:

- Oil Refineries
- Chemical Plants
- Ethanol Plants
- Biodiesel Plants
- Manufacturing Facilities
- Pharmaceutical Manufacturers
- Food Processors
- Gas Pipeline Compressor Stations
- Steel Mills
- Paper Mills
- Power Utilities

Our goal is to help you achieve 100% compliance.

For more information, please contact the ARI office nearest you.

Houston Office:
1710 Preston Road • Suite C
Pasadena, Texas 77503
713.946.6222

Chicago Office:
951 Old Rand Road • Unit 106
Wauconda, Illinois 60084
847.487.1580

www.arienv.com

FTIR Benefits:

- Real-time results and measurements in seconds
- Simultaneous analysis of multiple gaseous compounds, VOCs and HAPs
- Measures organic and inorganic compounds
- Sensitivity from very low parts per million to high percent levels
- Validation of VOC test methods using USEPA Method 301

FTIR Applications:

- Determining VOC and HAP emissions for regulatory compliance
- Characterizing gas stream for process optimization and product loss control
- Monitoring reactors during shutdown
- Real-time optimization of air pollution control equipment
- Verifying past emissions test data based on off-site VOC analysis
- SCR optimization
- Determining VOC emission events for batch reactors
- Fence line studies
- Investigating "false positives" in USEPA test methods

Established FTIR Methods:

- USEPA Method 318 - Extractive FTIR Method for Measurement of Emissions from Mineral Wool and Wool Fiberglass Industries
- USEPA Performance Specification 15 for Extractive FTIR CEMS in Stationary Sources
- USEPA Method 320 - Vapor Phase Organic and Inorganic Emissions by FTIR
- USEPA Method 321 - Determination of HCl for Portland Cement Industries
- NIOSH Method 3800 - Organic and Inorganic Gases by Extractive FTIR Spectrometry
- ASTM Method D6348-03 Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared Spectroscopy

