

Chemical Analysis Capabilities

Natural Gas Analysis

- > ASTM D1945, GPA 2261, major component analysis
- > ASTM D6228, sulfur speciation by GC-FPD or GC-PFPD
- > ASTM D3588, calculated BTU, density, Wobbe Index
- > ASTM D3246, total sulfur
- > Extended hydrocarbons to C20
- > Ultimate calculation (CHNOS)
- > Hydrocarbon dewpoint
- > Mercury



Biogas and Synfuel Analysis

- > ASTM D1946, major component analysis
- > Fixed gas analysis
- > ASTM D6228, sulfur speciation by GC-FPD or GC-PFPD
- > Hydrogen sulfide
- > Reduced sulfur components
- > ASTM D3588, calculated BTU, density, Wobbe Index
- > Trace volatile hydrocarbons
- > Trace halocarbons
- > Siloxanes
- > Volatile organic chlorine and organic fluorine by GC-AED



Cylinder and Bag Rental

- > Inerted stainless steel cylinders for sulfur analysis
- > Stainless steel cylinders
- > Aluminum cylinders
- > Tedlar[®] bags

For More Information

Karen Crippen, R&D Manager,
Infrastructure Sector
847-768-0604;
karen.crippen@gastechnology.org

Other Trace Gas Analysis

- > Hydrogen, helium, argon
- > Trace CO and CO₂
- > Trace hydrocarbons
- > Oxygen

Coal and Fuel Analysis

- > Ultimate
- > ASTM D5373, CHN
- > ASTM 4239, Sulfur
- > ASTM D5142, Proximate
- > ASTM D5865, calorific value
- > Major/minor oxides in ash
- > Karl Fischer water

Materials and Physical Testing

- > BET Surface area
- > Nano-pore size distribution
- > Mercury porosimetry
- > Helium density by pycnometer
- > Bulk density
- > Particle density
- > FTIR
- > DSC, TGA, and TMA
- > Rheology
- > ASTM D792, Specific Gravity
- > ASTM D5630, Ash by Method B



Metals and Solids Analysis

- > Metal composition by ICP
- > Metal composition by glow discharge spectroscopy
- > ASTM E1019, carbon, sulfur



Microbiology

- > qPCR
- > Microbial influenced corrosion evaluation
- > Biodiversity



Failure Analysis, Metals, Polymers, Coating, Corrosion and Pipe Testing Capabilities

Coating Tests

- > Abrasion Resistance
- > Adhesion
- > Cathodic Disbondment
- > Coating Thickness
- > Chemical Attack
- > Chip Resistance
- > Coating Hardness
- > Impact Resistance
- > Penetration Resistance
- > Q(UV) and Q-Sun (Xenon-Arc)
- > Water Absorption/Penetration



Corrosion Testing

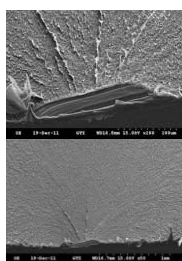
- > Salt Fog/Salt Spray
- > CCT and B117
- > Laboratory Immersion
- > Polarization Scans and Resistance
- > Tafel Plots/Voltammetry
- > LPR/ER
- > EIS

Mechanical Testing

- > Tensile/Compression/Flexural
- > Charpy and IZOD
- > Microhardness (Knoop/Vickers)
- > Rockwell and Brinell Hardness
- > Pipes/Valves/Pressure Vessels
- > Proof Load—Bolts and Nuts
- > Drop Weight Test

Metallography and Microscopy

- > SEM and EDX
- > Stereo Optical
- > Inclusion Counts
- > Micro-Examination
- > Phase Counts
- > Photography and Video



Failure Analysis and Consulting

- > Failure Analysis/Root Cause
- > Litigation Support
- > Product Testing
- > Fault Tree Analysis

Plastic/Polymer Testing

- > Tensile/Compression/Flexural
- > FTIR
- > DSC, TGA, and TMA
- > Rheology
- > Hardness
- > Specific Gravity/Density
- > DTMA



Plastic Pipe Testing

- > Tensile Data
- > Quick Burst
- > Long-Term Sustained/HDB
- > PENT
- > RCP/S-4
- > Fusion Bond/Fittings
- > Cyclic Pressure Fatigue
- > Chemical Resistance
- > Dimensional Analysis
- > Flexural Properties
- > Instrumented Impact Testing



Modeling

- > Finite Element Analysis
- > Predictive Models
- > Simulations
- > Design of Experiment

For More Information

Tony Kosari, Industrial Testing Manager,
Infrastructure Sector
847-768-0998;
tony.kosari@gastechnology.org