



**Specialty**  
MINERALS

## ANALYTICAL SERVICES

640 North 13<sup>th</sup> Street  
Easton, PA 18042  
484.541.7043

Throughout its 40 year history, the Analytical Services Group of Specialty Minerals Inc (SMI) has provided analytical and investigative services to Minteq, Pyrogenics and SMI's Research, Sales, Marketing, and Quality Assurance departments. These same services are now commercially available. The Group will function as both a service organization and a research facility engaged in developing new and improved analytical methods.

The Analytical Services Group is accredited by the American Association for Laboratory Accreditation (A2LA) to comply with ISO/IEC 17025-2005. The services are problem solving as well as solely analytical. We strongly recommend that the analysis objective, problem to be solved, or question to be answered be discussed and reviewed with SMI prior to sample submission. This discussion will guide the selection of appropriate methods, sampling techniques and control samples. Contact us at 610-250-3380 for a quotation.

### Material Characterization

- Refractory materials
- Slag reaction zones
- Contaminants
- Steel Inclusions
- Quantitative Mineral Identification
- Thermal Properties
- Research Projects

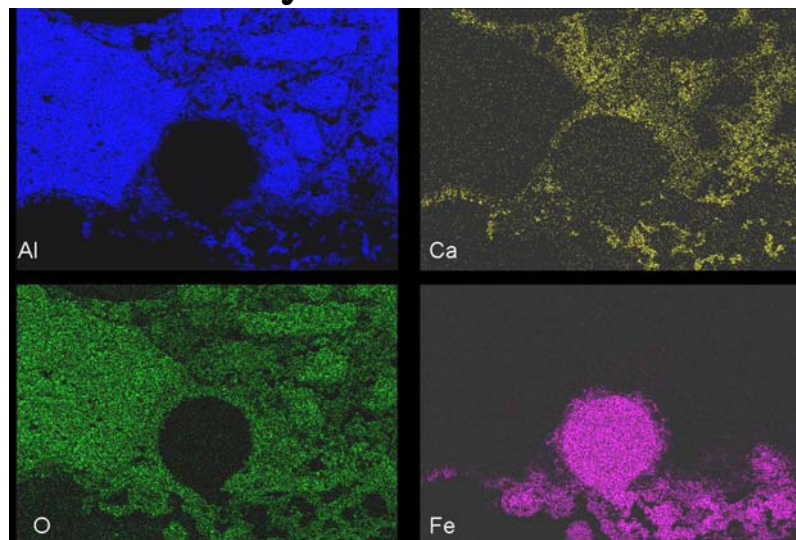
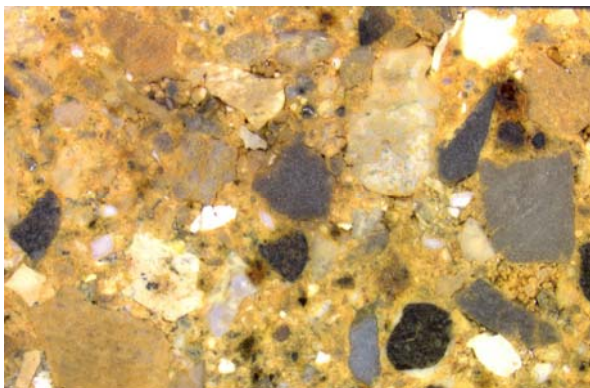
### Chemical Analysis

- Bulk Elemental Analysis
  - Refractory materials
  - Steel
  - Glass
  - Minerals
  - Steelmaking slag
  - Process water
- Organic Identification
- Low Temperature Carbon

### Microscopy

- Particle Size and Shape
- Elemental and Phase Mapping
- Grain Size

- Slag Reactions
- Thickness and Identification of multiple layers
- Porosity



**MiNTEQ**

# Capabilities List

Analysis is customized per client's request.  
Contact [asg@mineralstech.com](mailto:asg@mineralstech.com) or 484-541-7043 for  
test details, sample size, turnaround time and quotation.

## Light Microscopy

Transmitted and reflected with Bright Field, Darkfield,  
Differential Interference Contrast, Phase Contrast,  
Fluorescence, Imaging and Polarized Light  
Illumination

## SEM

Scanning Electron Microscopy

## FESEM

Field Emission Scanning Electron Microscopy

## XEDS

Xray Energy Dispersive Spectroscopy

## EBSD

Electron Back Scatter Diffraction

## Quantitative Image Analysis

Computerized image analysis system used for size  
analysis, coating coverage, And more

## XRD

Qualitative phase identification as major,  
minor or trace  
Semi-quantitative estimates as a range of  
the percent present

## Surface XRD

Surface layer phase identification using  
Parallel Beam Optics

## Thermal XRD

Mineral phase characterization vs.  
temperature to 1550°C

## Thermal Characterization

TGA-DTA - Scouting Runs to 1683°C

TGA-DTA - Quantitative testing to evaluate  
temperature of chemical and physical  
changes, monitor mass losses & assist  
phase identification

TGA-DSC - Enthalpy to 1500°C

## Trace Elemental Analysis ICP-MS

Elements determined by client.

## Anion Analysis

F, Cl, NO<sub>2</sub>, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>,

## FTIR

Characterization by FTIR

## Solvent Extractive

Determine weight extracted with  
specified solvent

## Loss On Ignition (LOI)

Determine weight loss of volatile  
compounds, performed at specified  
time and temperature

## pH

Cold or Hot Extraction

## Ash Content

Determine weight of residue at  
specified time and temperature

## Additional Charges

per quote

Sample Preparation, polish

Custom Reporting

per quote

## Rush Analyses (call for availability)

3-5 Day turnaround

100% Premium

24-48 hour Turnaround

200% Premium

## Multiple Sample Discounts

6-10

5% Discount

11-20

10% Discount

21-40

15% Discount

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type. Please request a quotation.



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