AN-036
EA3100 SERIES
APPLICATION NOTE

(S) in Coal

Sulphur determination is a very important parameter for evaluation of coal environmental impact as it is directly related to the SO_2 emission into atmosphere. Sulphur is also analysed for the determination of coal Calorific Value, one of the most important parameters by which coal is mined for combustion applications.

The ability to reduce sample sizes up to submilligrams in the analysis of substances with more than 50% ashes is a key factor for keeping a high throughput while preserving high reliability and accuracy in results. Sulphur content, in particular, is one of the most challenging determination.

Coal sample weight 0.5 ÷ 3.0 mg, average particle size 75 micron, was put in 5 x 9 mm tin cup adding ≈ 5 mg of V_2O_5 for Sulphur determination. Analysis completes in 6 minutes independently from sample size. Ashes are eliminated by quartz liner without extracting Reactor from Furnace.

Weaver$^{.NET}$, the most complete software for EA, accurately doses O_2 injection for optimal combustion and integrates peaks in real time immediately providing S results.

INSTRUMENTATION	SAMPLE
EA3100 - Sulphur analysis time: 6 min.	Coal - 75 micron mesh size
Calibration Std: Acetanilide	Weight: 0.5 ÷ 3.0 mg in 5 x 9 mm tin cups

TYPICAL RESULTS (THREE SERIES OF 4 REPLICATES)

SAMPLE	S%
South Africa #1	0.988
South Africa #1	0.953
South Africa #1	0.948
South Africa #1	0.962
Average	0.963
Std. Dev.	0.018

TYPICAL RESULTS (THREE SERIES OF 4 REPLICATES)

SAMPLE	S%
Poland #1	0.553
Poland #1	0.562
Poland #1	0.538
Poland #1	0.549
Average	0.551
Std. Dev.	0.010
Poland #2	0.741
Poland #2	0.757
Poland #2	0.737
Poland #2	0.728
Average	0.741
Std. Dev.	0.012

EuroVector maintains expertize on customer's applications for analytical support: the most representative samples have been grouped as "Samples by Category" providing a series of Application notes for each category.

Biomass, Biofuel, Wastes

Soils, Sediments, Rocks

Plants, Branches leaves, Roots, Vegetables

Food, Feed Oil seeds, Sunflowers, Cereals, Corn, Brewing malt...

Coal, Coke, Peat

Petroleum, Lubricants

Organics, Synthetic, Compounds, Polymers textiles, Pharma, Fertilizers

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