AN-002 - EA3000 Series
Application Note

(CHNS) (O) in Biomass

The search for new forms of clean and sustainable energy is today one of the most demanding target. (CHNS)(O) analysis is the typical application for determination of heat values and pollutants, keeping under control environmental impact of regenerated resources such as Biomass, Biofuel and Industrial Wastes.

This samples category covers a wide variety of solid samples including woods, organic compounds and heterogeneous materials.

Typical Biomass composition

Cellulose	50%
Hemicellulose	25%
Lignin	25%
Resins	<5%
Ash forming	<1%

Biomass and Biofuel Element % composition

	C%	H%	N%	S%	O%
Biomass	43 ÷ 49	4,5 ÷ 5,9	< 0,1	< 1	≈ 42
Biofuel	≈ 51	≈ 6	< 0,1	< 1	≈ 42

Sample Weight 2.0 ÷ 5.0 mg or more was used providing results in 6 minutes for (CHNS), saving Helium and assuring the highest number of samples per day.

Instrumentation	Sample
EA3000 - Analysis time: (CHNS) 6 min. ; (O) 3 min.	Biomass
Calibration Std: Acetanilide, Sulphanilamide	Weigh: 2.0 ÷ 5.0 mg or more

EuroVector EA3000 provides (CHNS) in Combustion Mode and (O) in Pyrolysis Mode. Oxygen is routinely and reliably performed in 3 minutes followed by chromatography separation of CO equivalent to Oxygen% granting accurate results.

BIOMASS, BIOFUEL, WASTES

EUROVECTOR
INSTRUMENTS & SOFTWARE

(CHNS)(O) in Biomass

Comprehensive results are presented in one of the user pre-selected formats:

Typical Results (6 replicates)

Sample	N%	C%	H%	S%	O%
Biomass	1.305	48.447	6.801	0.356	42.201
Biomass	1.310	48.632	6.809	0.298	42.437
Biomass	1.307	48.738	6.731	0.311	42.378
Biomass	1.312	48.371	6.773	0.380	42.234
Biomass	1.309	48.833	6.789	0.309	42.476
Biomass	1.311	48.615	6.793	0.274	42.689
Average value	**1.309**	**48.606**	**6.783**	**0.321**	**42.403**
Std. Dev.	**0.003**	**0.173**	**0.028**	**0.039**	**0.178**

Callidus SW stores and reprocesses an unlimited number of samples, performs automatic leak test, wake-up routine and auto-ready prompting routine maintenance.
The SW allows for Automatic weighs transfer from Balance to Samples Table.

	KJ/Kg	Kcal/Kg	BTU/Lb
Gross Heat Value	18.654	4.455	8.019
Net Heat Value	17.196	4.107	7.393

Heat Values are calculated based on the average Element% result values.

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:

EUROVECTOR INSTRUMENTS & SOFTWARE

EuroVector Srl - Via A.Manzoni, 16
27050 Redavalle (PV) - Italy

Tel: 0039.0385.747010
Fax: 0039.0385.749196

e-mail: eurovector@eurovector.it
http: www.eurovector.it