

Analytical Report

Reportnr. : 409281 version 1	Disponent Number :
Product recognized as : Hout/Wood/Bois/Holz/Madera	Sampling Date : 27-Aug-2013
Product Specification : Wood Pellets	Sample size (kg) : 1,719
Reference :	Sealed / Seal Code : No /
AWB / BarCode :	Sample Arrival Date : 28-Aug-2013 11:47
Packing : Plastic, ambient	ReportDate Version : 03-Sep-2013 15:41
Sample Type : BIS	Origin : United States

Disp. Remark : **Zakgoed Greenmax**

Composition Determination

Parameter	Amount (a.r.)	Amount (o.d.)	Amount (as det.)	Amount (d.a.f.)		
Total Moisture	6,01				%	Q
Moisture Airdry			7,42		%	Q
Ash	0,39	0,42	0,38		%	Q
Volatile matter incl. moisture.			85,24		%	Q
Volatile matter	79,01	84,06	77,82	84,41	%	
Fixed Carbon	14,59	15,52			%	
Gross Calorific Value	4663,2	4961,4	4593,0	4982,1	kcal/kg	Q
	19,52	20,77	19,23	20,86	GJ/mt	
Nett Calorific Value (cV)	8393,8	8930,5	8267,4	8967,8	B.T.U.'s/Lb	
	4331,1				kcal/kg	
	18,13				GJ/mt	
	7796,0				B.T.U.'s/Lb	
Nett Calorific Value (cP)	18,06				GJ/mt	
Emissionfactor CO2 (cV)	99,35				t CO2/TJ	
Emissionfactor CO2 (cP)	99,77				t CO2/TJ	
Hydrogen	6,08	6,47	6,81	6,49	%	Q
Carbon	49,13	52,27	48,39	52,49	%	Q
Nitrogen	0,07	0,08	0,07	0,08	%	Q
S. (Sulphur)	0,03	0,03	0,03	0,03	%	
Oxygen (by difference)				40,91	%	

Other Analysis

Common

Parameter	Amount (a.r.)	Amount (o.d.)	Amount (as det.)		
Mechanical Durability			98,8	%	Q
Bulk density			673,40	kg/m3	Q

Preparation

Common

Parameter	Amount (a.r.)	Amount (o.d.)	Amount (as det.)		
Preparation sample					Q
					Biomass preparation according NEN-EN14780

Demanded 28-Aug-2013

Analyses according to annex

Drs. ing. H. Janssens Technical Director TLR International Laboratories

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Q - Analysis accredited by RvA

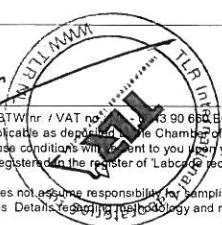


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Findings are based on the sample as submitted. TLR does not assume responsibility for sampling, selection, representativity and
identifications such as codes, markings or product names. Details regarding methodology and measuring uncertainty will be provided
upon request. Contact info@tlr.nl



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ANNEX

Method Descriptions

Composition Determination

Common

Method Description

Determination of ash; gravimetric method

Coal: NEN-ISO 1171 Biomass : EN-14775; Secondary bio fuels : NEN-EN-15403

Determination of gross calorific value by bombcaloric method and calculation of net calorific value

Coal: NEN-ISO 1928, Solid Biofuels NEN-EN14918; secondary biofuels NEN-EN15400

Determination of moisture in the analyse sample; gravimetric method

Coal: NEN-ISO 11722; Biomass: NEN-EN14774-3; Secondary bio fuels : NEN-EN15414-3

Determination of Sulphur (S); NEN-EN 15289

Determination of total moisture in the sample; gravimetric method

Coal: ISO-589 biomass: NEN-EN14774-1; Secondary bio fuels : NEN-EN15414-1

Determination of volatile matter content; gravimetric method

Coal: NEN-ISO 562; Biomass: NEN-EN15148; secondary biofuels: NEN-EN 15402

Method Code

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Other Analysis

Common

Method Description

Determination of bulk density (poured) and tamped bulk density

Determination of mechanical durability of pellets

Method Code

Acc. NEN-EN-15103

acc. EN 15210

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