

Analytical Report

Control Union Certifications Germany GmbH

Bornitzstraße 73-75 D-10365 Berlin Germany

Reportnr.

: 1922298 version 1 Sample Arrival Date 17-Oct-2024 16:25 ReportDate Version 06-Dec-2024 14:23 Packing : Plastic, ambient

: UA022/T/A1/0910

Sampling Date

*: 09-Oct-2024

Samplesize (kg) :15 Seal / Seal Code : No /

Sample information *

Disp. Remark

Disponent Number :875336

Product specification : Woodpellets

Reference :UA022_2024_10_09

* Information supplied by customer (TLR takes no responsibility for this information).

Composition Determination		3/			-	
Parameter	Result (as received)	Result (on dry)	Result (as det)	Result (dry ash free)		
Total Moisture	7,6			%	Q	R
Moisture Airdry			6,6	%	/ Q	R
Ash	0,29	0,32	0,30	%	Q	R
Volatile matter incl. moisture.			86,29	%	Q	R
Volatile matter Fixed Carbon	78,83 13,28	85,31 14,37	79,66	85,58 % %		
Gross Calorific Value	4553,4	4927,9	4601,5	4943,6 kcal/kg	Q	R
	19,06 8196,1	20,63 8870,3	19,27 8282,7	20,70 GJ/mt 8898,5 B.T.U.'s/Lb		
Nett Calorific Value (cV)	4237,3 17,74 7627,1 4,9			kcal/kg GJ/mt B.T.U.'s/Lb kWh/kg	Q	¥
Nett Calorific Value (cP) Emissionfactor CO2 (cV) Emissionfactor CO2 (cP)	17,66 97,57 97,99	> //		GJ/mt t CO2/TJ t CO2/TJ	Q	
Hydrogen	5,57	6,03	6,37	6,05 %	Q	R
Carbon	47,20	51,08	47,70	51,25 %	Q	R
Nitrogen.	0,10	0,11	0,10	0,11 %	Q	R
S. (Sulfer)	0,013	0,014	0,013	0,014 %	Q	R
Oxygen (by difference)	1.	7		42,580 %		
Preparation Common	Jak-					
Parameter	Result (as received)	Result (on dry)	Result (as det)			
Preparation sample	Biomass prepa	Q	R			
Composition Determination Common						
Parameter	Result (as received)	Result (on dry)	Result (as det)			
AFT. (oxid) DT			1410	gr. C		R

Demanded 17-Oct-2024 by Control Union Certifications Germany GmbH Analyses according to annex

P.W. Platteschor, Managing Director TLR International Laboratories



Page 1 of 4

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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. Handelsweg 70 2988 DB Ridderkerk The Netherlands T. +31 (0)10-28 23 292 e-mail: info@tlr.nl



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Diameter pellets (n=25)	6,2			mm	Q	R
Length of pellets	11,1			mm	Q	R
Sieve < 3,15 mm.	0,27			%	Q	R
3,15 mm = < FP < 5,6 mm			0,25	%		R
Metal and other elements	Colonia Colonia	>				
Parameter	Result (as received)	Result (on dry)	Result (as det)	M.		
Cd (Cadmium)	0,140	0,152	0,142	mg/kg	Q	R
Pb (Lead)	0,08	0,09	0,08	mg/kg	Q	R
As (Arsenic)	< 0,040	< 0,040	< 0,040	mg/kg	Q	7 R
Hg (Mercury)	< 0,020	< 0,020	< 0,020	mg/kg	Q	R
Ni (Nickel)	< 3,0	< 3,0	< 3,0	mg/kg	Q	R
Cl (Chlorine)	< 0,005	< 0,005	< 0,005	%	Q	R
Cr.(Chromium)	< 5,0	< 5,0	< 5,0	mg/kg		R
Cu.(Copper)	< 5,0	< 5,0	< 5,0	mg/kg		R
Zn. (Zinc)	7,5	8,2	7,6	mg/kg		R
Other Analysis	29	/·		· / X / //		
Common	/ / / /	-11./32		17: 11.1		
Parameter	Result (as received)	Result (on dry)	Result (as det)		1	
Mechanical Durability	99,3	: //> </td <td></td> <td>%</td> <td>Q</td> <td>R</td>		%	Q	R
Bulk density-	648	19.		kg/m3	Q	R
Particle density		17/	1,27	g/cm3		R
Share of pellets< 10mm	/1	X	29,4	w %		R
Category	Category M	1				R

Sample Remarks :

Sample is a copy of SampleID: 1907392, on demand of the customer teh full ENPlus analyse package was added

Q - Analyses ISO 17025 accredited by RvA (ILAC) R - Carried out by TLR International Laboratories, location Ridderkerk





Page 2 of 4

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ANNEX

Method Descriptions

Composition Determination

Common

Method Description Determination of ash; gravimetric method

Coal: NEN-ISO 1171 Biomass: NEN-EN-ISO 21656; Secondary bio fuels: NEN-EN-ISO

Determination of carbon (C), nitrogen (N), hydrogen (H) with the element analyser

Coal: NEN-ISO29541, Biomass: NEN-EN-ISO 21663: Secondary bio fuels NEN-EN

Determination of fusibility of ash; ash formed (815°C), cube form

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

Coal: NEN-ISO 1928, Solid Biofuels NEN-EN-ISO18125; secundairy biofuels NEN-EN-

ISO 21654 Determination of moisture in the analyse sample; gravimetric method

Coal: NEN-ISO 11722; Biomass: NEN-EN-ISO 18134-3; Secondary bio fuels: NEN-EN-

ISO 21660-3

Determination of Sulphur (S); NEN-EN-ISO 16994 Determination of the amount of material passing through a sieve with 3,15 mm diameter

round hole ISO 18846:2016

Determination of the length and diameter of the woodpellets

Determination of total moisture in the sample; gravimetric method

Coal:NEN-ISO-589 MB biomasss: NEN-EN-ISO 18134-1; Secondary bio fuels: NPR-

CEN/TS 15414-1

Determination of volatile matter content; gravimetric method

Coal: NEN-ISO 562; Biomass: NEN-EN-ISO 18123; secundairy biofuels: NEN-EN 15402

Metal and other elements **Method Description**

Determination of Chlorine (CI); Ion chromatography

Biomass: according NEN-EN-ISO 16994 Coal: Own method

Determination of mercury (Hg); CV-AAS

Determination of minor elements. As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn

Other Analysis

Common

Method Description

Method Code

Method Code

Acc.NEN-EN-ISO 21404

Acc. NEN-EN-ISO17829

Acc.

Acc.

Acc.

Acc

Acc

Acc.

Acc.

Acc.

NEN-EN-ISO 16994

Acc. NEN-EN-ISO16968 Eq.NEN-EN-ISO 16968

Method Code

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Page 3 of 4

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> Determination of bulk density (poured) bulk density Determination of mechanical durability of pellets; Acc.

Determination of particle density of pellets

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> Acc.NEN-EN-ISO 17828 NEN-EN-ISO 17831-1 Acc. ISO 18847

Abbreviations:

acc: in accordance with eq: Equivalent to



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Page 4 of 4

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