

# **Analytical Report**

**Control Union Certifications Germany GmbH** 

Bornitzstraße 73-75 D-10365 Berlin Germany

: 1907387 version 1 Reportnr.

Sample Arrival Date 17-Oct-2024 16:11 ReportDate Version : 25-Oct-2024 13:45 Packing

: Plastic, ambient

Product specification : Woodpellets

Reference

Sampling Date

Samplesize (kg)

Seal / Seal Code

:UA022\_2024\_10\_09

Sample information \*

Disponent Number :875336

Disp. Remark : UA022/KK/A1/0910/BB

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

\*: 09-Oct-2024

:15

: No /

Composition Determination						
Parameter	Result (as received)	Result (on dry)	Result (as det)	Result (dry ash free)		
Total Moisture	7,1			%	Q	R
Moisture Airdry			8,9	%	Q	/ R
Ash	0,26	0,28	0,25	%	Q	R
Volatile matter incl. moisture.			87,27	%	Q	R
Volatile matter Fixed Carbon	79,95 12,72	86,03 13,69	78,40	86,27 % %		
Gross Calorific Value	4559,8	4906,7	4471,3	4920,5 kcal/kg	Q	R
	19,09	20,54	18,72	20,60 GJ/mt		
Nett Calorific Value (cV)	8207,7 4235,2 17,73 7623,4 4,9	8832,1	8048,4	8856,8 B.T.U.'s/Lb kcal/kg GJ/mt B.T.U.'s/Lb kWh/kg	Q	<b>Y</b>
Nett Calorific Value (cP) Emissionfactor CO2 (cV) Emissionfactor CO2 (cP)	17,65 98,21 98,64	> //		GJ/mt t CO2/TJ t CO2/TJ	Q	
Hydrogen	5,80	6,24	6,68	6,26 %	Q	R
Carbon	47,49	51,10	46,57	51,24 %	Q	R
Nitrogen.	0,10	0,11	0,10	0,11 %	Q	R
S. (Sulfer)	< 0,010	< 0,010	< 0,010	< 0,010 %	Q	R
Oxygen (by difference)	4.2 1	y		42,380 %		
Preparation	. 17.1-					
Common	af /					
Parameter	Result (as received)	Result (on dry)	Result (as det)			
Preparation sample	Biomass preparation in accordance with NEN-EN-ISO21646					R
Composition Determination						
Common			100			
Parameter	Result (as received)	Result (on dry)	Result (as det)			
AFT. (oxid) DT		-	1370	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



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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)	6,0			mm	Q	R
Length of pellets		10,8			mm	Q	R
Sieve < 3,15 mm.	1 X	0,26			%	Q	R
3,15 mm = < FP <	5,6 mm	NI		0,26	%		R
Metal and other ele	ments		>				
Parameter		Result (as received)	Result (on dry)	Result (as det)	No.	1	
Cd (Cadmium)		0,145	0,156	0,142	mg/kg	Q	R
Pb (Lead)		0,12	0,13	0,12	mg/kg	Q	R
As (Arsenic)		< 0,040	< 0,040	< 0,040	mg/kg	Q	R
Hg (Mercury)		< 0,020	< 0,020	< 0,020	mg/kg	Q	R
Ni (Nickel)	1111	< 3,0	< 3,0	< 3,0	mg/kg	Q	R
CI (Chlorine)		< 0,005	< 0,005	< 0,005	%	Q	R
Cr.(Chromium)	Xa San Maria	< 5,0	< 5,0	< 5,0	mg/kg	* A	R
Cu.(Copper)		< 5,0	< 5,0	< 5,0	mg/kg		R/
Zn. (Zinc)		6,7	7,2	6,6	mg/kg		R
Other Analysis	1.70	29	A		· /: X /://		
Common		14.17	-1./3		19:11/1		y
Parameter	\	Result (as received)	Result (on dry)	Result (as det)			
Mechanical Durabil	ity	99,1			%	Q	R
Bulk density-		641	19.		kg/m3	Q	R
Particle density			17/1/	1,25	g/cm3		R
Share of pellets< 1	0mm	/1	X	34,3	w %		R
Category		Category S	1				R

R - Carried out by TLR International Laboratories, location Ridderkerk

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#### **ANNEX**

Packing

#### **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** Acc.

Acc.

Acc.NEN-EN-ISO 21404

Acc.

Acc

Acc

Acc.

Acc. NEN-EN-ISO17829

Acc.

Acc.

#### Method Code

**NEN-EN-ISO 16994** 

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

#### **Method Code**

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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@tr.nl.

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Determination of bulk density (poured) bulk density

Determination of mechanical durability of pellets; Acc. Determination of particle density of pellets

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

\*: 09-Oct-2024

:15

: No /

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#### Abbreviations:

acc: in accordance with eq: Equivalent to



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