

Analytical Report

Control Union Certifications Germany GmbH

Attn: . .
Dorotheastrasse 30
D-10318 Berlin
Germany

Reportnr. : **1715413 version 1**
Sample Arrival Date : 08-Mar-2023 19:31
ReportDate Version : **15-Mar-2023 17:46**
Packing : Plastic, ambient

Sampling Date * : 17-Feb-2023
Samplesize (kg) : 15
Seal / Seal Code : No /

Sample information *

Disponent Number : NP.TR-2023/1

Product specification : Wood pellets 6 mm
Reference : PRJ 892783

Disp. Remark : Client: NP Yenilenebilir Enerji Sis. Ve Orman
Ürn. San. Tic. Ltd. Sti

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

Composition Determination

Parameter	Result (as received)	Result (on dry)	Result (as det)	Result (dry ash free)		
Total Moisture	5,76			%	Q	R
Moisture Airdry			6,25	%	Q	R
Ash	0,77	0,82	0,77	%	Q	R
Volatile matter incl. moisture.			84,66	%	Q	R
Volatile matter	78,82	83,64	78,41	84,33	%	
Fixed Carbon	14,65	15,54		%		
Gross Calorific Value	4685,9	4972,3	4661,4	5013,4	kcal/kg	Q R
	19,62	20,82	19,52	20,99	GJ/mt	
	8434,7	8950,2	8390,5	9024,2	B.T.U.'s/Lb	
Nett Calorific Value (cV)	4384,4				kcal/kg	Q
	18,36				GJ/mt	
	7891,9				B.T.U.'s/Lb	
	5,1				kWh/kg	
Nett Calorific Value (cP)	18,28				GJ/mt	Q
Emissionfactor CO2 (cV)	96,79				t CO2/TJ	
Emissionfactor CO2 (cP)	97,18				t CO2/TJ	
Hydrogen	5,48	5,81	6,15	5,86	%	Q R
Carbon	48,45	51,42	48,20	51,84	%	Q R
Nitrogen.	0,07	0,07	0,07	0,07	%	Q R
S. (Sulfer)	< 0,010	< 0,010	< 0,010	< 0,010	%	Q R
Oxygen (by difference)				42,220	%	

Preparation

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)		
Preparation sample	B-wood preparation according NEN EN 14780 and NEN EN 15443			Q	R

Composition Determination

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Analyses according to annex
Drs. ing. H. Janssens Director TLR International Laboratories

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Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
AFT. (oxid) DT			1380	gr. C		R
Diameter pellets (n=25)	6,1			mm	Q	R
Length of pellets	10,0			mm	Q	R
Sieve < 3,15 mm.	0,22			%		R

Metal and other elements

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Cd (Cadmium)	0,071	0,076	0,071	mg/kg	Q	R
Pb (Lead)	0,27	0,28	0,27	mg/kg	Q	R
As (Arsenic)	0,209	0,222	0,208	mg/kg	Q	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 (Chloride)	< 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)	6,1	6,5	6,0	mg/kg		R

Other Analysis

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Mechanical Durability	98,3			%	Q	R
Bulk density-	676			kg/m3	Q	R

Q - Analyses ISO 17025 accredited by RvA (ILAC)

R - Carried out by TLR International Laboratories, location Ridderkerk

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ANNEX

Method Descriptions

Composition Determination

Common

Method Description

Determination of ash; gravimetric method
Coal: NEN-ISO 1171 Biomass: NEN-EN15403; Secondary bio fuels: NEN-EN- ISO 18122

Determination of carbon (C), nitrogen (N), hydrogen (H) with the element analyser
Coal : NEN-ISO29541, Biomass: NEN-EN-ISO 16948 : Secondary bio fuels NEN-EN 15407

Determination of fusibility of ash; acc EN-plus, ash formed (815°C), cube form

Determination of gross calorific value by bombcaloric method and calculation of net calorific value
Coal: NEN-ISO 1928, Solid Biofuels NEN-EN-ISO18125; secondary biofuels NEN-EN15400

Determination of moisture in the analyse sample; gravimetric method
Coal: NEN-ISO 11722;Biomass: NEN-EN-ISO 18134-3; Secondary bio fuels : NEN-EN15414-3

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; Own method

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; secondary biofuels: NEN-EN 15402

Method Code

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Own method

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Acc. NEN-EN-ISO17829

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Metal and other elements

Method Description

Determination of chloride (Cl); 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

Method Code

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Acc. NEN-EN-ISO16968

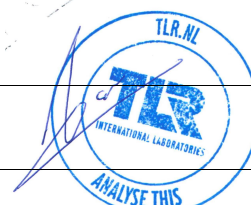
eq.nen-en-iso16968

Other Analysis

Common

Method Description

Method Code



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

Determination of bulk density (poured) bulk density
Determination of mechanical durability of pellets

Abbreviations:

acc: in accordance with
eq: Equivalent to

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