

Analytical Report

Comgoed biomasse B.V.
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Reportnr. : **1684570 version 1**
Sample Arrival Date : 05-Dec-2022 12:26
ReportDate Version : **11-Dec-2022 22:17**
Packing : Plastic, ambient

Sampling Date * : 21-Nov-2022
Samplesize (kg) : 15
Seal / Seal Code : No

Sample information *

Product specification : Enplus A1 Certified Pellets
Reference : 3365778

* 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	6,95				%		Q	R
Moisture Airdry			6,33		%		Q	R
Ash	0,43	0,46	0,43		%		Q	R
Volatile matter incl. moisture.			84,89		%		Q	R
Volatile matter	78,04	83,87	78,56	84,26	%			
Fixed Carbon	14,58	15,67			%			
Gross Calorific Value	4525,6	4863,6	4555,9	4886,0	kcal/kg		Q	R
	18,95	20,36	19,07	20,46	GJ/mt			
Nett Calorific Value (cV)	8146,1	8754,6	8200,5	8794,8	B.T.U.'s/Lb		Q	
	4201,0				kcal/kg			
	17,59				GJ/mt			
	7561,7				B.T.U.'s/Lb			
	4,9				kWh/kg			
Nett Calorific Value (cP)	17,51				GJ/mt		Q	
Emissionfactor CO2 (cV)	93,57				† CO2/TJ			
Emissionfactor CO2 (cP)	93,99				† CO2/TJ			
Hydrogen	5,82	6,25	6,56	6,28	%		Q	R
Carbon	44,88	48,23	45,18	48,45	%		Q	R
Nitrogen.	0,08	0,09	0,09	0,09	%		Q	R
S. (Sulfer)	< 0,010	< 0,010	< 0,010	< 0,010	%		Q	R
Oxygen (by difference)				45,170	%			

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

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
AFT. (oxid) DT			1370	gr. C		R



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Diameter pellets (n=25)	6,5	mm	Q	R
Length of pellets	12,0	mm	Q	R
Sieve < 3,15 mm.	< 0,1	%		R

Metal and other elements

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Cd (Cadmium)	0,104	0,112	0,105	mg/kg	Q	R
Pb (Lead)	0,23	0,25	0,23	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)	< 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)	13,8	14,8	13,9	mg/kg		R

Other Analysis

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Mechanical Durability	99,5			%	Q	R
Bulk density-	658			kg/m3	Q	R

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

Demanded 05-Dec-2022 by Comgoed biomasse B.V.
 Analyses according to annex
 Drs. ing. H. Janssens Director TLR International Laboratories



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

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

Abbreviations:

acc: in accordance with
eq: Equivalent to

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