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INTERNATIONAL LABORATORIES

Analytical Report

Control Union Certifications Germany GmbH
Attn: . .
Dorotheastrasse 30
D-10318 Berlin
Germany

Reportnr.	: **1698402 version 1**		
Sample Arrival Date	: 18-Jan-2023 10:00	Sampling Date *	: 09-Jan-2023
ReportDate Version	: **25-Jan-2023 12:37**	Samplesize (kg)	: 15
Packing	: Plastic, ambient	Seal / Seal Code	: No /

Sample information *

Disponent Number	: 0901/Agro/A1	Product specification	: woodpellets
Disp. Remark	: Client: VKPP Agropromtekhtsentr		

*** 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	7,28				%	Q	R
Moisture Airdry			6,49		%	Q	R
Ash	0,34	0,37	0,35		%	Q	R
Volatile matter incl. moisture.			86,54		%	Q	R
Volatile matter	79,38	85,61	80,05	85,93	%		
Fixed Carbon	13,00	14,02			%		
Gross Calorific Value	4641,9	5006,4	4681,5	5025,1	kcal/kg	Q	R
	19,43	20,96	19,60	21,04	GJ/mt		
	8355,4	9011,5	8426,7	9045,1	B.T.U.'s/Lb		
Nett Calorific Value (cV)	4317,5				kcal/kg	Q	
	18,08				GJ/mt		
	7771,4				B.T.U.'s/Lb		
	5,0				kWh/kg		
Nett Calorific Value (cP)	18,00				GJ/mt	Q	
Emissionfactor CO2 (cV)	90,32				t CO2/TJ		
Emissionfactor CO2 (cP)	90,71				t CO2/TJ		
Hydrogen	5,77	6,23	6,55	6,25	%	Q	R
Carbon	44,52	48,02	44,90	48,20	%	Q	R
Nitrogen.	0,13	0,14	0,13	0,14	%	Q	R
S. (Sulfer)	< 0,010	< 0,010	< 0,010	< 0,010	%	Q	R
Oxygen (by difference)				45,400	%		

Preparation

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Preparation sample	Biomass preparation in accordance with 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			1340	gr. C		R

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TLR International Laboratories is also registered in the register of 'GMP+FCS B10+ recognised test laboratories' under no. GMP018011
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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Diameter pellets (n=25)	6,3			mm	Q	R
Length of pellets	10,5			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)	0,142	0,154	0,144	mg/kg	Q	R
Pb (Lead)	0,06	0,06	0,06	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)	7,9	8,5	8,0	mg/kg		R

Other Analysis

Common

Parameter	Result (as received)	Result (on dry)	Result (as det)			
Mechanical Durability	98,9			%	Q	R
Bulk density-	649			kg/m3	Q	R

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

FOSFA INTERNATIONAL Gafta RvA TESTING RvA L 059

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ANNEX

Method Descriptions

Composition Determination

Common

Method Description	Method Code
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	Own method
Determination of gross caloric value by bombcaloric method and calculation of net caloric value Coal: NEN-ISO 1928, Solid Biofuels NEN-EN-ISO18125; secundairy 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	Acc. NEN-EN-ISO17829
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	Method Code
Determination of chloride (Cl); Ion chromatography Biomass: according NEN-EN-ISO 16994 Coal: Own method	..
Determination of mercury (Hg); CV-AAS	Acc. NEN-EN-ISO16968
Determination of minor elements. As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn	eq.nen-en-iso16968

Other Analysis

Common

Method Description	Method Code

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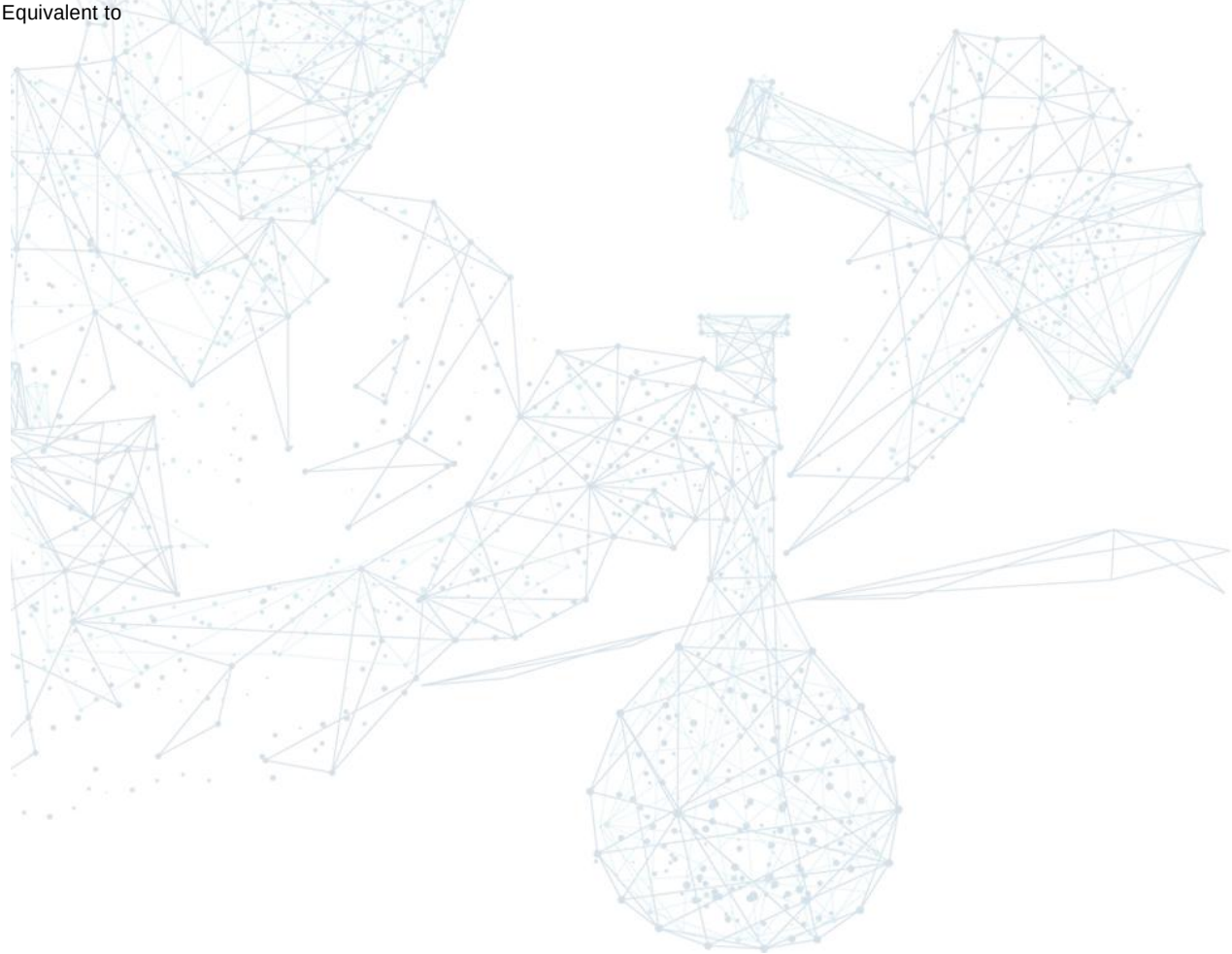
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Determination of bulk density (poured) bulk density	Acc.NEN-EN-ISO 17828
Determination of mechanical durability of pellets	NEN-EN-ISO 17831-1

Abbreviations:
acc: in accordance with
eq: Equivalent to



Demanded 18-Jan-2023 by Control Union Certifications Germany GmbH
Analyses according to annex
Drs. ing. H. Janssens Director TLR International Laboratories

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