

# AGRICULTURAL SERVICES

## ANALYSIS REPORT

CERTIFICATE NO.

AGRIVIETNAM2020-2941

GENERAL INFORMATION

**Applicant** : BIOMASS FUEL VIET NAM CO.,LTD  
**Sample Quantity** : 01 SAMPLE  
**Commodity declared** : WOOD PELLET  
**Sample Submitted on** : 14-Dec-20  
**Sample tested on** : 18-Jan-21  
**Place of analysis** : INTERTEK VIETNAM LABORATORY

Based on Testing Report AGL20121202-1 & AGL21010021 issued by Intertek Vietnam Ltd., which we have sighted and keep in our file for eventual further reference, the submitted sample was sent to laboratory for analyzing with the below results:

No.	Item	Unit	The result of the cargo analysis	Method of testing
1	Length (**)	mm	17	ISO 17829:2015
2	Diameter (**)	mm	8	ISO 17829:2015
3	Total moisture	%wt	3.53	ISO 18134-1:2015
4	Inherent Moisture	%wt	3.4	ISO 18134-3:2015
5	Gross calorific value (as received basis) (**)	Kcal/kg	4641	ISO 18125:2017
6	Gross calorific value (as dry basis) (**)	Kcal/kg	4811	ISO 18125:2017
7	Net calorific value (as received basis) (**)	Kcal/kg	4301	ISO 18125:2017
8	Ash content (as dry basis) (**)	%wt	0.93	ISO 18122:2017
9	Sulfur (As dry Basis)	%wt	0.04	ISO 16994:2015
10	Durability (As Received basis) (**)	%wt	99	ISO 17831-1:2015
11	Ash Fusion Temperature, IDT(Reducing Atmosphere) (**)	°C	1150	CEN/TS 15370-1:2006

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12	Ash Fusion Temperature, IDT(Oxidizing Atmosphere) (**)	°C	1162	CEN/TS 15370-1:2006
13	Ash Fusion Temperature, Reducing Atmosphere, HT (**)	°C	1170	CEN/TS 15370-1:2006
14	Ash Fusion Temperature, Oxidizing Atmosphere, HT (**)	°C	1178	CEN/TS 15370-1:2006
15	Ash Fusion Temperature, Reducing Atmosphere, FT (**)	°C	1192	CEN/TS 15370-1:2006
16	Ash Fusion Temperature, Oxidizing Atmosphere, FT (**)	°C	1198	CEN/TS 15370-1:2006
17	Bulk Density (as received basis) (**)	kg/m <sup>3</sup>	738	ISO 17828:2015
18	Particle size < 3.15 mm	%wt	99.3	ISO 17830:2016
	< 2.00 mm	%wt	98.1	ISO 17830:2016
	< 1.00 mm	%wt	77.9	ISO 17830:2016
	< 0.06 mm	%wt	56.7	ISO 17830:2016
19	Nitrogen (As dry basis)	%wt	0.26	FST-WI08 Chapter 154/ Kjeldahl Method
20	Oxygen (by diff), (As Dry basis, Exclude O in moisture)	%wt	41.4	Calculation
21	Carbon (As dry basis) (*)	%wt	50.9	ISO 16948:2015
22	Hydrogen (As dry basis) (*)	%wt	6.44	ISO 16948:2015
23	Chlorine (as dry basis)	mg/kg	0.03	ISO 16994:2016
24	Fluorine (as dry basis) (*)	mg/kg	Less than 10	FST-WI15 Chapter 45/(IC-CD)
25	D50 (**)	mm	0.48	ISO 17830:2016
26	D98 (**)	mm	1.99	ISO 17830:2016
27	Carbon (As dry ash free) (*)	%wt	51.4	ISO 16948:2015
28	Element (on dry basic) (*) Asenic content (As)	mg/kg	Lees than 0.1	ISO 16968:2015
29	Cadmium content (Cd)	mg/kg	Lees than 0.1	ISO 16968:2015
30	Crominium content (Cr)	mg/kg	1.97	ISO 16968:2015
31	Cooper content (Cu)	mg/kg	1.58	ISO 16968:2015

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32	Lead content (Pb)	mg/kg	Lees than 1	ISO 16968:2015
33	Zinc content (Zn)	mg/kg	8.81	ISO 16968:2015
34	Mercury content (Hg)	mg/kg	Lees than 0.02	ISO 16968:2015
35	Element (on dry basic) (*) Boron content (B)	mg/kg	3.73	ISO 16967:2015
36	Selenium content (Se)	mg/kg	Lees than 0.03	ISO 16967:2015
37	Aluminum content (Al)	mg/kg	195	ISO 16967:2015
38	Canxi content (Ca)	mg/kg	1619	ISO 16967:2015
39	Magie content (Mg)	mg/kg	215	ISO 16967:2015
40	Potassium content (K)	mg/kg	757	ISO 16967:2015
41	Sodium content (Na)	mg/kg	222	ISO 16967:2015
42	On ash (*) SiO <sub>2</sub>	%wt	32.53	Acid digestion
43	Al <sub>2</sub> O <sub>3</sub>	%wt	3.82	ISO 16967:2015
44	Fe <sub>2</sub> O <sub>3</sub>	%wt	3.18	ISO 16967:2015
45	CaO	%wt	23.51	ISO 16967:2015
46	MgO	%wt	3.71	ISO 16967:2015
47	TiO <sub>2</sub>	%wt	Lees than 0.1	ISO 16967:2015
48	Na <sub>2</sub> O	%wt	3.1	ISO 16967:2015
49	K <sub>2</sub> O	%wt	9.46	ISO 16967:2015
50	P <sub>2</sub> O <sub>5</sub>	%wt	2.24	ISO 16967:2015
51	SO <sub>3</sub>	%wt	4.56	ISO 16967:2015
52	MnO	%wt	0.94	ISO 16967:2015
53	Mn <sub>3</sub> O <sub>4</sub>	%wt	1.01	ISO 16967:2015
54	BaO	%wt	0.18	ISO 16967:2015

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55	V2O5	%wt	Less than 0.1	ISO 16967:2015
56	ZnO	%wt	0.11	ISO 16967:2015
57	SrO	%wt	0.12	ISO 16967:2015
58	Na+K (as dry basis)	mg/kg	979	ISO 16967:2015
59	Fixed Carbon by calculation, Fixed carbon (by diff), Air dried	%wt	16.2	Calculated
60	Foreign matter	-	NOT DETECTED	Visual Inspection
61	Volatile Matter (Air Dried Basis)	%wt	79.1	EN 15148:2015
62	Phosphorus content (P)	mg/kg	104	ISO 16967 (2015)/ ICP-OES

Note: *The above analysis results are based on submitted sample by BIOMASS FUEL VIET NAM CO.,LTD*

*(\*\*) Accredited by VILAS 318*

*(\*) The test results in this document have been provided to Intertek by Subcontractor*

*() Not accredited by VILAS*

This certificate reflects the findings of Intertek at place and time of our intervention only and does not relieve any party from their contractual responsibilities.

**ISSUED BY**

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**DATE SIGNED**

January 18, 2021



**DINH CAO TRI**



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