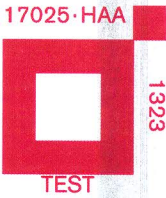




CENTRAL LABORATORY FOR CHEMICAL ANALYSIS
Zagorska ulica 1, ZAGREB, CROATIA
Tel/fax + 385 1 3093-939
cktl@hep.hr



LABORATORY REPORT no. CKTL 315/22

Date: 20th July 2022

CUSTOMER SAMPLE CODE:	A1_ 60122009
SAMPLE TYPE:	Wood pellets
CUSTOMER NAME AND ADDRESS:	TÜV NORD Adriatic d.o.o., Bani 110 • 10010 Zagreb
CLIENT NAME:	HR 002 Moderator d.o.o.
SAMPLE QUANTITY:	15 kg
SAMPLING DATE AND TIME:	14 th July 2022, 12:30
SAMPLE DELIVERED BY:	TÜV NORD Adriatic d.o.o.
DELIVERY DATE:	14 th July 2022
TESTING PERIOD:	14 th -19 th July 2022

TEST RESULTS:

No	Property	Units	Test methods	Results		Relative UM (%)	ENplus® quality class	The standard limits for the ENplus® parameters		
				Dry	As received			ENplus A1	ENplus A2	ENplus B
1.	Dimension *  (D&L)	mm	HRN EN ISO 17829:2015	Diameter: 6,2		0,8	A1	6 ± 1 or 8 ± 1		
				Length: 17,4		2,6	A1	3,15 < L ≤ 40		
2.	Moisture *  (M)	mas. %	HRN EN ISO 18134-1:2015	-	5,3	8,3	A1	≤ 10		
3.	Ash *  (A)	mas. %	HRN EN ISO 18122:2015	0,7	0,7	2,1	A1	≤ 0,7	≤ 1,2	≤ 2,0
4.	Mechanical durability *  (DU)	mas. %	HRN EN ISO 17831-1:2016	-	99,2	2,4	A1	≥ 98,0	≥ 97,5	
5.	Fines *  (F)	mas. %	HRN EN ISO 18846:2016	-	0,01	3,3	A1	≤ 1,0 ¹⁾ ≤ 0,5 ²⁾		
6.	Net calorific value *  (CV)	kWh/kg	HRN EN ISO 18125:2017	5,16	4,85	0,1	A1	≥ 4,6		
7.	Bulk density *  (BD)	kg/m³	HRN EN ISO 17828:2016	-	660	1,1	A1	600 ≤ BD ≤ 750		
8.	Nitrogen content *  (N)	mas. %	HRN EN ISO 16948:2015	0,15	0,14	4,52	A1	≤ 0,3	≤ 0,5	≤ 1,0
9.	Sulphur content *  (S)	mas. %	HRN EN ISO 16994:2016	0,015	0,014	6,407	A1	≤ 0,04	≤ 0,05	
10.	Chlorine content *  (Cl)	mas. %	HRN EN ISO 16994:2016	0,004	0,004	7,355	A1	≤ 0,02		≤ 0,03
11.	Arsenic content *  (As)	mg/kg	HRN EN ISO 16968:2015	0,027	0,026	2,57	A1	≤ 1		
12.	Cadmium content * (Cd)	mg/kg	HRN EN ISO 16968:2015	<0,040	<0,040	7,15	A1	≤ 0,5		

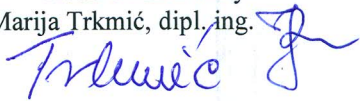
13.	Chromium content ^{*f☒} (Cr)	mg/kg	HRN EN ISO 16968:2015	0,239	0,227	2,63	A1	≤ 10	
14.	Copper content ^{*f☒} (Cu)	mg/kg	HRN EN ISO 16968:2015	1,07	1,01	0,34	A1	≤ 10	
15.	Lead content ^{*f☒} (Pb)	mg/kg	HRN EN ISO 16968:2015	0,133	0,126	0,64	A1	≤ 10	
16.	Mercury content ^{*f☒} (Hg)	mg/kg	HRN EN ISO 16968:2015	<0,005	<0,005	6,67	A1	≤ 0,1	
17.	Nickel content ^{*f☒} (Ni)	mg/kg	HRN EN ISO 16968:2015	<0,240	<0,240	2,15	A1	≤ 10	
18.	Zinc content ^{*f☒} (Zn)	mg/kg	HRN EN ISO 16968:2015	<3,42	<3,42	1,70	A1	≤ 100	
Ash melting behaviour ^{*f☒} -Characteristic temperatures (oxidation atmosphere)							ENplus® quality class		
		Units	Test methods	Results	Relative UM (%)	ENplus® quality class	ENplus A2	ENplus A2	ENplus B
19.	SST – Shrinkage starting temperature	°C	HRN EN ISO 21404: 2020	1210	0,1	-			
20.	DT – Deformation temperature			1350	0,1	A1	≥ 1200	≥ 1100	
21.	HT – Hemisphere temperature			>1490	0,1	-			
22.	FT – Flow temperature			>1490	0,1	-			

NOTE: ¹⁾ at factory gate or when loading truck for deliveries to end-users (Part Load Delivery and Full Load Delivery)
²⁾ at factory gate, when filling pellet bags or sealed Big Bags.

- * accredited methods within flexible scope according HRN EN ISO/IEC 17025:2017 standard
- Measurement uncertainties are calculated, but not taken into account for determination of ENplus® quality class.
 - Statements of conformity with ENplus® quality classes are reported according to Binary Statement for Simple Acceptance Rule (ILAC-G8:09/2019).
 - The test results refer only to the tested samples.
 - The test report or its parts cannot be reproduced, except in whole, with the approval of the Head of laboratory.

STATEMENT OF CONFORMITY:

All tested parameters **meet** ENplus® requirements for the A1 class.

Test report approved by:
Head of laboratory:
dr. sc. Marija Trkmić, dipl. ing.


THE END OF THE REPORT