



CERTIFICATE

№ 5/BOŚ-A-855/2013

- Product name:** Wood pellets
- Customer:** EKOPAL Sp. z o.o.
Jagodne, ul. Jagodna 3
12-200 Pisz
- Contract no.:** A-855-BOŚ/2013
- The object of the assessment:** The object of the assessment was solid biofuel in the form of pellets made of softwood sawdust from the sawmill treatment.
- Basis for the assessment:** EN 14961-2:2011 Solid biofuels - Fuel specifications and classes - Part 2: Wood pellets for non-industrial use
- Test results:** For the details of the test results see description on page 2.
- Opinion:** On the basis of test results it is concluded that the tested sample of fuel pellets, in the field of performed tests, meet the requirements for formed fuels of natural wood, described in the standard EN 14961-2:2011 in category A1.
- Author of the opinion:** Małgorzata WALKOWIAK, M.Sc.
- Validity period:** 17th May 2014
- Enclosed documents:** Test report no. 855/2013/S.M.
- Date:** 17th May 2013

Stamp of the Institute

Head of the Department

Z-ca KIEROWNIKA
Zakładu Ochrony Środowiska
i Chemii DREWNA
dr inż. Wojciech Cichy



Director of the Institute

DYREKTOR
dr Władysław Strykowski
prof. nadzw. ITD

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Classification of biofuel according to EN 14961-2:2011

Producer		EKOPAL Sp. z o.o. Jagodne, ul. Jagodna 3 12-200 Pisz			
Origin according to EN 14961:2010, Table 1		1.2.1.2	By-products and residues from wood processing industry. Chemically untreated wood residues, without bark, coniferous.		
Traded form according to EN 14961:2010, Table 2		Pellets			
Parameter	Unit	Category A1 acc. to EN 14961-2:2011	Value		
			threshold	obtained	
Dimensions: diameter length	[mm] [mm]	D 06 3,15 < L < 40 mm	6 mm ± 1,0 mm 3,15 mm ÷ 40 mm	6,4 11,8	
Moisture	[% _{ar}]	M10	≤ 10	5,6	
Ash	[% _d]	A 0.7	≤ 0,7	0,30	
Mechanical durability	[% _{ar}]	DU 97.5	≥ 97,5	98,0	
Fines < 3,15mm	[% _{ar}]	F1.0	≤ 1,0%	0,34	
Additives	[% _d]	Type and content of additives have to be stated	≤ 2	No additives	
Bulk density	[kg/m ³ _{ar}]	BD 600	≥ 600	621	
Net calorific value	[MJ/kg _{ar}] [kWh/kg _{ar}]	Q16.5 Q4.6	16,5 < Q < 19,0 4,6 < Q < 5,3	18,05 5,01	
Nitrogen, N	[% _d]	N 0.3	≤ 0,3	0,23	
Sulphur, S	[% _d]	S 0.03	≤ 0,03	< 0,01	
Chlorine, Cl	[% _d]	Cl 0.02	≤ 0,02	0,008	
Arsenic, As	[mg/kg _d]	≤ 1	≤ 1	< 0,1	
Cadmium, Cd	[mg/kg _d]	≤ 0,5	≤ 0,5	0,185	
Chromium, Cr	[mg/kg _d]	≤ 10	≤ 10	0,467	
Copper, Cu	[mg/kg _d]	≤ 10	≤ 10	0,691	
Lead, Pb	[mg/kg _d]	≤ 10	≤ 10	< 0,01	
Mercury, Hg	[mg/kg _d]	≤ 0,1	≤ 0,1	0,003	
Nickel, Ni	[mg/kg _d]	≤ 10	≤ 10	0,336	
Zinc, Zn	[mg/kg _d]	≤ 100	≤ 100	8,2	
Informacyjne	Ash melting behaviour Shrinkage starting temperature (SST)	[°C]	Should be stated	Should be stated	750
	Ash melting behaviour Deformation temperature (DT)	[°C]	Should be stated	Should be stated	1500
	Ash melting behaviour Hemisphere temperature (HT)	[°C]	Should be stated	Should be stated	>1500
	Ash melting behaviour Flow temperature (FT)	[°C]	Should be stated	Should be stated	>1500
ar – as received, d – dry, w – mass fraction, * – below the level of quantification					