

For the production of wood pellets produced by

UAB Graanul Invest, Alytus, LITHUANIA

certified according to **ENplus® A1** with the ID number: **LT006 and EE301**

we confirm the following test results analysed within the inspection 2022 valid until the inspection in 2023.

Sample 2022111	Standard	unit	Pellets	Limit values according class A1	
				ENplus®	DINplus
mechanical durability	ISO 17831-1:2015	[%]	98,7	≥ 98,0	≥ 98,0
bulk density (ar)	ISO 17828:2015	[kg/m³]	690	750≥BD≥600	750≥BD≥600
moisture content	ISO 18134-2:2017	[%]	5,6	≤ 10	≤ 10
ash content 550°C(db)	ISO 18122:2015**	[%]	0,4	≤ 0,7	≤ 0,6
net calorific value (ar)	ISO 18125:2017	[MJ/kg]	17,8	≥ 16,5	≥ 16,5
net calorific value (ar)	ISO 18125:2017	[kWh/kg]	5,0	≥ 4,6	≥ 4,6
net calorific value (db)	ISO 18125:2017	[MJ/kg]	19,0	-	-
net calorific value (db)	ISO 18125:2017	[kWh/kg]	5,3	-	-
gross calorific value (ar)	ISO 18125:2017	[MJ/kg]	19,3	-	-
gross calorific value (ar)	ISO 18125:2017	[kWh/kg]	5,4	-	-
Sulphur content (db)	ISO 16994:2016***	[%]	0,014	≤ 0,04	≤ 0,04
Chlorine content (db)	ISO 16994:2016***	[%]	< 0,005	≤ 0,02	≤ 0,02
Nitrogen content (db)	ISO 16948:2015	[%]	< 0,05	≤ 0,30	≤ 0,30
pressing aid / additives	-	[%]	0	≤ 1,8	≤ 2
dimensions					
finer (< 3,15 mm)	ISO 18846:2016	[%]	0,2	≤ 0,5* / ≤ 1,0	≤ 0,5* / ≤ 1,0
length (40 ≤ L ≤ 45 mm)	ISO 17829:2015	[%]	0	≤ 1	≤ 1
length (> 45 mm)**	ISO 17829:2015	[amount]	0	0	0
diameter	ISO 17829:2015	[mm]	6	6 or 8 ± 1	6 or 8 ± 1
heavy metals (quantification according to ISO 17294-2:2016)					
Chromium (db)	ISO 16968:2015	[mg/kg]	< 1	≤ 10	≤ 10
Copper (db)	ISO 16968:2015	[mg/kg]	1,1	≤ 10	≤ 10
Zinc (db)	ISO 16968:2015	[mg/kg]	9,9	≤ 100	≤ 100
Lead (db)	ISO 16968:2015	[mg/kg]	< 0,5	≤ 10	≤ 10
Mercury (db)	ISO 16968:2015	[mg/kg]	< 0,075	≤ 0,1	≤ 0,1
Cadmium (db)	ISO 16968:2015	[mg/kg]	0,14	≤ 0,5	≤ 0,5
Arsenic (db)	ISO 16968:2015	[mg/kg]	< 0,5	≤ 1	≤ 1
Nickel (db)	ISO 16968:2015	[mg/kg]	< 1	≤ 10	≤ 10
ash melting behaviour (oxidizing atmosphere, ash preparation at 815°C)					
shrinking temperature SST	CEN/TS 15370-1:2006	[°C]	1050	-	-
deformation temperature DT	CEN/TS 15370-1:2006	[°C]	1480	≥ 1200	≥ 1200
hemisphere temperature HT	CEN/TS 15370-1:2006	[°C]	> 1550	-	-
flow temperature FT	CEN/TS 15370-1:2006	[°C]	> 1550	-	-

* for bags or sealed big bags, ar...as received, db...dry basis