

Eurofins Umwelt Ost GmbH - Lindenstraße 11 - Gewerbegebiet Freiberg Ost -  
09627 Bobritzsch-Hilbersdorf

**DIN CERTCO Gesellschaft für  
Konformitätsbewertung mbH  
Alboinstraße 56  
12103 Berlin**

Title : **Extract from (Batch): AR-25-FR-008334-01 (12504297)**

Test report number : **EX-25-FR-000476-01**

Project name : **Verfahrensnummer: 3386963 / Bestellnummer: 2219259**

Number of samples : **2**

Sample type: **wood pellets**

Date of sample taking : **2025-01-22**

Sample Taker: **not specified, sample(s) were delivered to lab**

Sampling Area: **Granulita UAB, Fertigungsstätte Vainiunai**

Sample reception date : **2025-02-03**

Sample processing time : **2025-02-03 - 2025-02-11**

The test results solely refer to the analysed test specimen. Unless the sampling was done by our laboratory or in our sub-order the responsibility for the correctness of the sampling, as well as for the customer information or calculation results based on it, is disclaimed. The results then apply to the sample as received. This test report is electronically signed and may only be further published completely and unchanged. Extracts or changes require the authorisation of the EUROFINS UMWELT in each individual case.

Our General Terms & Conditions of Sale (GTCS) are applicable, as far as no specific agreements do exist. The GTCS are available on <http://www.eurofins.de/umwelt/avb.aspx>.

Accredited test laboratory according to DIN EN ISO/IEC 17025:2018 DAkkS notification under the DAkkS German Accreditation System for Testing. The laboratory is according (D-PL-14081-01-00) accredited.

Katja Schulze  
Analytical Service Manager

+49 3731 2076 583

Digitally signed 2/26/2025  
Katja Schulze  
Analytical Service Manager



Parameter	Lab	Accr.	Method	Limit values						Description		7A139 bagging line		7A139 storage bulk pellets	
				ENplus A1 ar	ENplus A1 db	Enplus A2 ar	ENplus A2 db	ENplus B ar	ENplus B db	Date and time of sample taking		2025-01-22		2025-01-22	
				Sample number						LOQ	Unit	125014809		125014810	
											ar	db	ar	db	
<b>Quality characteristics</b>															
Length	FR	F5	DIN EN ISO 17829: 2016-03	4)		4)		4)				o.k.	-	o.k.	-
Diameter	FR	F5	DIN EN ISO 17829: 2016-03	5)		5)		5)			mm	6.2	-	6.3	-
Moisture	FR	F5	DIN EN ISO 18134-2: 2017-05	10 <sup>6)</sup>		10 <sup>6)</sup>		10 <sup>6)</sup>		0.1	% (w/w)	7.0	-	6.5	-
Ash content (550°C)	FR	F5	DIN EN ISO 18122: 2016-03		0.7 <sup>7)</sup>		1.2 <sup>7)</sup>		2 <sup>7)</sup>	0.1	% (w/w)	0.3	0.3	0.4	0.4
Durability	FR	F5	DIN EN ISO 17831-1: 2016-05	≥ 98 <sup>8)</sup>		≥ 97.5		≥ 97.5			% (w/w)	99.2	-	98.9	-
Fine portion < 3,15 mm	FR	F5	DIN EN ISO 5370: 2022-03 E	1 <sup>9)</sup>		1 <sup>9)</sup>		1 <sup>9)</sup>		0.1	% (w/w)	0.2	-	0.2	-
Coarse pellet fines, CPF > 3,15 - < 5,6 mm	FR	F5	DIN EN ISO 5370: 2022-03 E	10)		10)		10)		0.1	% (w/w)	< 0.1	-	< 0.1	-
Bulk density	FR	F5	DIN EN ISO 17828: 2016-05	600 - 750		600 - 750		600 - 750			kg/m <sup>3</sup>	669	-	657	-
Particle density	FR	F5	DIN EN ISO 18847: 2016-12	10)		10)		10)			g/cm <sup>3</sup>	1.13	-	1.13	-
Gross calorific value (qV,gr)	FR	F5	DIN EN ISO 18125: 2017-08							200	kJ/kg	19500 <sup>1)</sup>	21000 <sup>1)</sup>	19700 <sup>1)</sup>	21100 <sup>1)</sup>
Net calorific value (qp,net)	FR	F5	DIN EN ISO 18125: 2017-08	≥ 4.6 <sup>11)</sup>		≥ 4.6 <sup>11)</sup>		≥ 4.6 <sup>11)</sup>		0.06	kWh/kg	5.03 <sup>2)</sup>	5.46 <sup>2)</sup>	5.08 <sup>2)</sup>	5.49 <sup>2)</sup>
Carbon	FR	F5	DIN EN ISO 16948: 2015-09							0.2	% (w/w)	48.0	51.5	47.7	51.0
Nitrogen	FR	F5	DIN EN ISO 16948: 2015-09		0.3		0.5		1	0.05	% (w/w)	0.20	0.21	0.22	0.24
Hydrogen	FR	F5	DIN EN ISO 16948: 2015-09							0.1	% (w/w)	5.6	6.0	5.6	6.0
Oxygen	FR	F5	DIN EN ISO 16993: 2016-11								% (w/w)	39.0	41.9	39.5	42.3
Sulphur	FR	F5	DIN EN ISO 16994: 2016-12		0.04		0.04		0.04	0.005	% (w/w)	0.006	0.007	0.008	0.008
Chlorine	FR	F5	DIN EN ISO 16994: 2016-12		0.02		0.02		0.03	0.005	% (w/w)	< 0.005	< 0.005	0.009	0.010

Parameter	Lab	Accr.	Method	Limit values						Description		7A139 bagging line		7A139 storage bulk pellets	
				ENplus A1 ar	ENplus A1 db	Enplus A2 ar	ENplus A2 db	ENplus B ar	ENplus B db	Date and time of sample taking		2025-01-22		2025-01-22	
				LOQ	Unit	Sample number		125014809		125014810		ar	db	ar	db
<b>Trace elements acc. to DIN EN ISO 16968: 2015-09</b>															
Arsenic (As)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		1		1		1	0.8	mg/kg	-	< 0.8	-	< 0.8
Lead (Pb)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		10		10		10	2	mg/kg	-	< 2	-	< 2
Cadmium (Cd)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		0.5		0.5		0.5	0.2	mg/kg	-	< 0.2	-	< 0.2
Chromium (Cr)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		10		10		10	1	mg/kg	-	< 1	-	< 1
Copper (Cu)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		10		10		10	1	mg/kg	-	< 1	-	< 1
Nickel (Ni)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		10		10		10	1	mg/kg	-	2	-	< 1
Mercury (Hg)	FR	F5	DIN EN ISO 12846 (E12): 2012-08		0.1		0.1		0.1	0.05	mg/kg	-	< 0.05	-	< 0.05
Zinc (Zn)	FR	F5	DIN EN ISO 17294-2 (E29): 2017-01		100		100		100	1	mg/kg	-	8	-	11
<b>Ash melting behaviour (ox. atmo.) 815°C</b>															
Shrinkage start temp SST	FR	F5	DIN EN ISO 21404: 2020-06		12)		12)		12)		°C	-	1130	-	1080
Deformation temp DT	FR	F5	DIN EN ISO 21404: 2020-06		≥ 1200		≥ 1100		≥ 1100		°C	-	> 1500	-	1470
Hemisphere temp HT	FR	F5	DIN EN ISO 21404: 2020-06		12)		12)		12)		°C	-	> 1500	-	1490 <sup>3)</sup>
Flow temp FT	FR	F5	DIN EN ISO 21404: 2020-06		12)		12)		12)		°C	-	> 1500	-	1500

## Explanations

LOQ - Limit of quantification

ar - as received

db - dry basis

Lab - Abbreviation of the performing laboratory

Accr. - Abbreviation of the accreditation of the performing laboratory

Comments for results

<sup>1)</sup> (qV, gr) gross calorific value at constant volume

<sup>2)</sup> (qp, net) net calorific value at constant pressure

<sup>3)</sup> \* \_no definite hemisphere (hill-like form)

The parameters identified by FR have been performed by the laboratory Eurofins Umwelt Ost GmbH (Lindenstraße 11, Gewerbegebiet Freiberg Ost, Bobritzsch-Hilbersdorf). The accreditation code F5 identifies the parameters accredited according to DIN EN ISO/IEC 17025:2018 DAkkS D-PL-14081-01-00 .

## Explanations regarding Limits

Analysis performed according to ENplus® ST 1001:2022, first edition 10/2022, Table 4.

- <sup>4)</sup>  $3,15 \leq L \leq 40$  mm; A maximum of 1% of the pellets may be longer than 40 mm. No pellets longer than 45 mm are allowed.
- <sup>5)</sup>  $6 \pm 1$  mm,  $8 \pm 1$  mm
- <sup>6)</sup> The limit value is 10.0 % (w/w).
- <sup>7)</sup> The required significance of the limit values 0.70/1.20/2.00 can not be represented with the prescribed analytical method.
- <sup>8)</sup> The limit value is  $\geq 98.0$  % (w/w).
- <sup>9)</sup> Bulk: At company gate or when loading big bags or trucks for deliveries to end-users. Bags:  $\leq 0,5$  At company gate, when filling bags (bagged pellets).
- <sup>10)</sup> Value to be stated.
- <sup>11)</sup> qp,net: net calorific value at constant pressure
- <sup>12)</sup> Ash is produced at 815 °C. All characteristic temperatures listed in ISO 21404 shall be stated in the report.

The presentation of comparative values in the analytical report is a service provided by EUROFINS UMWELT. The cited comparative values (limit, guideline or other allocation values) are partially simplified and do not take into account all comments, ancillary provisions and/or exemptions of the corresponding regulations.