

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

AENOR INTERNACIONAL, S.A.U.
CL Genova 6
28004 Madrid
SPAIN

Title : **Extract from (Batch): AR-20-FR-002680-01 (12001091)**

Test report number : **EX-20-FR-000205-01**

Project name : **AENOR REFERENCE 0060111, GESBRICK S.L.**

Number of samples : **1**

Sample type : **wood pellets**

Sample Taker: **Client**

Sample reception date : **2020-01-15**

Sample processing time : **2020-01-15 - 2020-01-27**

The test results refer solely 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 is disclaimed. This test report is only valid with signature and may only be further published completely and unchanged. Extracts or changes require the authorisation of the EUROFINS UMWELT in each individual case.

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Accredited test laboratory according to DIN EN ISO/IEC 17025:2005 notification under the DAkkS German Accreditation System for Testing. The laboratory is according (D-PL-14081-01-00) accredited.

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Digitally signed 1/28/2020
Annett Rietschel
Prüfleitung



Parameter	Lab	Accr.	Method	Limit values		Description		0060111	
				DIN plus ar	DIN plus db	Sample number		120003591	
						LOQ	Unit	ar	db

Quality characteristics

Length	FR	JE02	DIN EN ISO 17829: 2016-03	1)				o.k.	-
Diameter	FR	JE02	DIN EN ISO 17829: 2016-03	2)			mm	6.0	-
Moisture	FR	JE02	DIN EN ISO 18134-2: 2017-05	10		0.1	% (w/w)	6.4	-
Ash content (550°C)	FR	JE02	DIN EN ISO 18122: 2016-03		0.7	0.1	% (w/w)	0.4	0.5
Durability	FR	JE02	DIN EN ISO 17831-1: 2016-05	≥ 97.5			% (w/w)	99.0	-
Fine portion < 3,15 mm	FR	JE02	DIN EN ISO 18846: 2016-12	0.5 ³⁾		0.1	% (w/w)	< 0.1	-
Bulk density	FR	JE02	DIN EN ISO 17828: 2016-05	≥ 600 ⁴⁾			kg/m ³	703	-
Gross calorific value (qV,gr)	FR	JE02	DIN EN ISO 18125: 2017-08			200	kJ/kg	19200	20600
Net calorific value (qp,net)	FR	JE02	berechnet nach DIN EN ISO 18125: 2017-08	> 4.6 ⁵⁾		0.06	kWh/kg	4.96	5.34
Carbon	FR	JE02	DIN EN ISO 16948: 2015-09			0.2	% (w/w)	48.2	51.5
Nitrogen	FR	JE02	DIN EN ISO 16948: 2015-09		0.3	0.05	% (w/w)	0.08	0.08
Hydrogen	FR	JE02	DIN EN ISO 16948: 2015-09			0.1	% (w/w)	5.7	6.1
Oxygen	FR	JE02	DIN EN ISO 16993: 2016-11				% (w/w)	39.2	41.8
Sulphur	FR	JE02	DIN EN ISO 16994: 2016-12		0.04	0.005	% (w/w)	0.010	0.011
Chlorine	FR	JE02	DIN EN ISO 16994: 2016-12		0.02	0.005	% (w/w)	< 0.005	< 0.005

Trace elements acc. to DIN EN ISO 16968: 2015-09

Arsenic (As)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		1	0.8	mg/kg	-	< 0.8
Lead (Pb)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		10	2	mg/kg	-	< 2
Cadmium (Cd)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		0.5	0.2	mg/kg	-	< 0.2
Chromium (Cr)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		10	1	mg/kg	-	1
Copper (Cu)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		10	1	mg/kg	-	< 1
Nickel (Ni)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		10	1	mg/kg	-	< 1
Mercury (Hg)	FR	JE02	DIN EN ISO 12846 (E12): 2012-08		0.1	0.05	mg/kg	-	< 0.05
Zinc (Zn)	FR	JE02	DIN EN ISO 17294-2 (E29): 2017-01		100	1	mg/kg	-	13

Ash melting behaviour (ox. atmo.) 815°C

Shrinkage start temp SST	FR	JE02	CEN/TS 15370-1: 2006-12		6)		°C	-	1100
Deformation temp DT	FR	JE02	CEN/TS 15370-1: 2006-12		≥ 1200 ⁶⁾		°C	-	1210&
Hemisphere temp HT	FR	JE02	CEN/TS 15370-1: 2006-12		6)		°C	-	1230*
Flow temp FT	FR	JE02	CEN/TS 15370-1: 2006-12		6)		°C	-	1230

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

& - overlaid by strong volume magnification

* - no definite hemisphere (hill-like form)

The parameters identified by FR have been performed by the laboratory Eurofins Umwelt Ost GmbH (Bobritzsch-Hilbersdorf). The accreditation code JE02 identifies the parameters accredited according to DIN EN ISO/IEC 17025:2005 D-PL-14081-01-00 .

Explanations regarding Limits

Analysis performed according to DIN plus (wood pellets) - edition June 2015.

- 1) 3,15 - 40 mm; up to 1 % of pellets can be longer than 40mm. Maximum length should be <45mm.
- 2) D06 or D08 pellets +/- 1mm
- 3) small packages up to 20 kg; large packages and bulk material: $\leq 1,0$
- 4) Maximum for bulk density is 750 kg/m³.
- 5) qp,net: net calorific value at constant pressure
- 6) should be given

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