

EUROFINS Umwelt Ost GmbH · Niederlassung Freiberg  
OT Tuttendorf, Gewerbepark "Schwarze Kiefern" · D-09633 Halsbrücke

**AENOR**  
**CI Genova 6 5a**

**28004 Madrid**  
**SPANIEN**

Title: **Test report to order 11308578**  
Test report: **No. 1008328011**

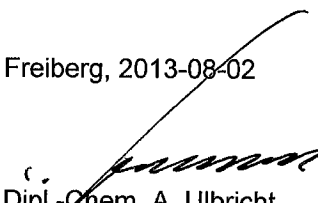
Project: **No. 1008328**  
Title of project: **AENOR Ref. 0037338, PELLETS ASTURIAS,S.L.**  
Number of samples: **1 sample**  
Sample type: **wood pellets**  
Receipt of samples: **2013-07-23**  
Test period: **2013-07-23 - 2013-08-01**

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 notification under the DAkkS German Accreditation System for Testing. The accreditation shall apply for the tests listed in the certificate.

Freiberg, 2013-08-02



Dipl.-Chem. A. Ulbricht  
Head of Laboratory



Deutsche  
Akkreditierungsstelle  
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# Test report to order 11308578

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Project: AENOR Ref. 0037338

Analysis according to EN plus August 2013

Parameter	Unit	LOQ	limits			Sample designation	N° 0037338
			EN Plus-A1	EN Plus-A2	EN Plus-B	Lab-ID#	113044358
						Method	
<b>Quality characteristics</b>							
diameter, D	mm		D06 6±1 D08 8±1	D06 6±1 D08 8±1	D06 6±1 D08 8±1	DIN EN 16127	6,3
length, L	mm		3,15 ≤ L ≤ 40	3,15 ≤ L ≤ 40	3,15 ≤ L ≤ 40	DIN EN 16127	according
water content, M	% w/w anl	0,1	M10 ≤ 10	M10 ≤ 10	M10 ≤ 10	DIN EN 14774-2	4,6
ash content, A (550°C)	% w/w wf	0,1	A0.7 ≤ 0,7	A1.5 ≤ 1,5	A3.0 ≤ 3,0	DIN EN 14775	0,45
mechanical durability, DU	% w/w anl		DU97.5 ≥ 97,5	DU97.5 ≥ 97,5	DU96.5 ≥ 96,5	DIN EN 15210-1	98,6
fine portion, F (< 3,15 mm)	% w/w anl	0,1	F1,0 < 1,0	F1,0 < 1,0	F1,0 < 1,0	DIN EN 15149-2	0,2
additive	% w/w anl		< 2 % (w/w) , sort and amount must be specified			Information given by the customer	not specified
bulk density, BD	kg/m³ anl		BD 600 ≥ 600	BD 600 ≥ 600	BD 600 ≥ 600	DIN EN 15103	680
net calorific value, Q (H u,p)	MJ/kg anl	0,2	16,5 ≤ Q ≤ 19	16,3 ≤ Q ≤ 19	16,0 ≤ Q ≤ 19	DIN EN 14918	18,05
nitrogen total, N	% w/w wf	0,05	N0.3 ≤ 0,3	N0.5 ≤ 0,5	N1.0 ≤ 1,0	DIN EN 15104	0,07
sulfur total, S	% w/w wf	0,005	S0.03 ≤ 0,03	S0.03 ≤ 0,03	S0.04 ≤ 0,04	DIN EN 15289	0,016
chlorine total, Cl	% w/w wf	0,005	Cl0.02 ≤ 0,02	Cl0.02 ≤ 0,02	Cl0.03 ≤ 0,03	DIN EN 15289	0,007

## Determination of minor elements from the microwave digestion according to DIN EN 15297

arsenic, As	mg/kg wf	0,8	≤ 1	≤ 1	≤ 1	DIN EN ISO 17294-2	< 0,8
lead, Pb	mg/kg wf	2	≤ 10	≤ 10	≤ 10	DIN EN ISO 17294-2	< 2
cadmium, Cd	mg/kg wf	0,2	≤ 0,5	≤ 0,5	≤ 0,5	DIN EN ISO 17294-2	< 0,2
chromium total, Cr	mg/kg wf	1	≤ 10	≤ 10	≤ 10	DIN EN ISO 17294-2	1
copper, Cu	mg/kg wf	1	≤ 10	≤ 10	≤ 10	DIN EN ISO 17294-2	1
nickel, Ni	mg/kg wf	1	≤ 10	≤ 10	≤ 10	DIN EN ISO 17294-2	< 1
mercury, Hg	mg/kg wf	0,07	≤ 0,1	≤ 0,1	≤ 0,1	DIN EN 1483	< 0,07
zinc, Zn	mg/kg wf	1	≤ 100	≤ 100	≤ 100	DIN EN ISO 17294-2	11

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Project: AENOR Ref. 0037338

Analysis according to EN plus August 2013

Parameter	Unit	LOQ	limits			Sample designation	N° 0037338
			EN Plus-A1	EN Plus-A2	EN Plus-B	Lab-ID#	113044358
						Method	

## Ash melting behaviour (oxidizing atmosphere) on ash 815°C

Parameter	Unit	LOQ	EN Plus-A1	EN Plus-A2	EN Plus-B	Method	
shrinkage start temperature, SST	°C		can be given	can be given	can be given	analogue DIN CEN/TS 15370-1	1030
deformation temperature, DT	°C		≥ 1200	≥ 1100	≥ 1100	analogue DIN CEN/TS 15370-1	1200
hemisphere temperature, HT	°C		can be given	can be given	can be given	analogue DIN CEN/TS 15370-1	1310*
flow temperature, FT	°C		can be given	can be given	can be given	analogue DIN CEN/TS 15370-1	1340

Annotation:

length: up to 1 % of pellets can be longer than 40mm. Maximum length should be <45mm.

Hu,p: net calorific value at constant pressure

ant: as received

wf: water free basis

\*: no definite hemisphere (hill-like form)

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