

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 : **Analytical Report for Order 12404354**
Test report number : **AR-24-FR-007217-01**

Project name : **Projekt 2015/1069/ENP/01, NATURPELLET, S.L.**

Number of samples : **2**
Sample type: **wood pellets**
Sample Taker: **not specified, sample(s) were delivered to lab**

Sample reception date : **2024-02-02**
Sample processing time : **2024-02-02 - 2024-02-13**

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 is disclaimed. This analytical 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.

Attachments

XML_Export_AR-24-FR-007217-01.xml

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| Parameter | Lab | Accr. | Method | Limit values | | | | | | Description | | 0171789, NATURPELLET 15 KG BAG | | 0171790, AENOR 8 KG BAG | |
|---|-----|-------|---|----------------------|-------------------|----------------------|-------------------|----------------------|-----------------|---------------|-------------------|-----------------------------------|---|----------------------------|---------------------|
| | | | | ENplus A1 ar | ENplus A1 db | Enplus A2 ar | ENplus A2 db | ENplus B ar | ENplus B db | Sample number | | 124014786 | | 124014787 | |
| | | | | LOQ | Unit | ar | db | ar | db | ar | db | | | | |
| Quality characteristics | | | | | | | | | | | | | | | |
| Fine portion < 3,15 mm | FR | F5 | DIN EN ISO 5370: 2022-03 E | 1 ³⁾ | | 1 ³⁾ | | 1 ³⁾ | | 0.1 | % (w/w) | 0.2 | - | - | - |
| Coarse pellet fines, CPF > 3,15 - < 5,6 mm | FR | F5 | DIN EN ISO 5370: 2022-03 E | 4) | | 4) | | 4) | | 0.1 | % (w/w) | 0.6 | - | - | - |
| Length | FR | F5 | DIN EN ISO 17829: 2016-03 | 5) | | 5) | | 5) | | | | - | - | o.k. | - |
| Diameter | FR | F5 | DIN EN ISO 17829: 2016-03 | 6) | | 6) | | 6) | | | mm | - | - | 6.0 | - |
| Moisture | FR | F5 | DIN EN ISO 18134-2: 2017-05 | 10 ⁷⁾ | | 10 ⁷⁾ | | 10 ⁷⁾ | | 0.1 | % (w/w) | - | - | 4.4 | - |
| Ash content (550°C) | FR | F5 | DIN EN ISO 18122: 2016-03 | | 0.7 ⁸⁾ | | 1.2 ⁸⁾ | | 2 ⁸⁾ | 0.1 | % (w/w) | - | - | 0.5 | 0.5 |
| Durability | FR | F5 | DIN EN ISO 17831-1: 2016-05 | ≥ 98 ⁹⁾ | | ≥ 97.5 | | ≥ 97.5 | | | % (w/w) | - | - | 99.0 | - |
| Bulk density | FR | F5 | DIN EN ISO 17828: 2016-05 | 600 - 750 | | 600 - 750 | | 600 - 750 | | | kg/m ³ | - | - | 668 | - |
| Particle density | FR | F5 | DIN EN ISO 18847: 2016-12 | 4) | | 4) | | 4) | | | g/cm ³ | - | - | 1.2 | - |
| Gross calorific value (qV,gr) | FR | F5 | DIN EN ISO 18125: 2017-08 | | | | | | | 200 | kJ/kg | - | - | 19600 ¹⁾ | 20500 ¹⁾ |
| Net calorific value (qp,net) | FR | F5 | berechnet nach DIN EN ISO 18125: 2017-08 | ≥ 4.6 ¹⁰⁾ | | ≥ 4.6 ¹⁰⁾ | | ≥ 4.6 ¹⁰⁾ | | 0.06 | kWh/kg | - | - | 5.07 ²⁾ | 5.34 ²⁾ |
| Carbon | FR | F5 | DIN EN ISO 16948: 2015-09 | | | | | | | 0.2 | % (w/w) | - | - | 49.0 | 51.2 |
| Nitrogen | FR | F5 | DIN EN ISO 16948: 2015-09 | | 0.3 | | 0.5 | | 1 | 0.05 | % (w/w) | - | - | 0.08 | 0.08 |
| Hydrogen | FR | F5 | DIN EN ISO 16948: 2015-09 | | | | | | | 0.1 | % (w/w) | - | - | 5.7 | 5.9 |
| Oxygen | FR | F5 | DIN EN ISO 16993: 2016-11 | | | | | | | | % (w/w) | - | - | 40.4 | 42.2 |
| Sulphur | FR | F5 | DIN EN ISO 16994: 2016-12 | | 0.04 | | 0.04 | | 0.04 | 0.005 | % (w/w) | - | - | 0.006 | 0.007 |
| Chlorine | FR | F5 | DIN EN ISO 16994: 2016-12 | | 0.02 | | 0.02 | | 0.03 | 0.005 | % (w/w) | - | - | < 0.005 | < 0.005 |

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|---|-----|-------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|---------------|-------|-----------------------------------|---|----------------------------|--------|
| | | | | ENplus A1 ar | ENplus A1 db | Enplus A2 ar | ENplus A2 db | ENplus B ar | ENplus B db | Sample number | | 124014786 | | 124014787 | |
| | | | | LOQ | Unit | ar | db | ar | db | ar | db | | | | |
| Trace elements acc. to DIN EN ISO 16968: 2015-09 | | | | | | | | | | | | | | | |
| Arsenic (As) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 1 | | 1 | | 1 | 0.8 | mg/kg | - | - | - | < 0.8 |
| Lead (Pb) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 10 | | 10 | | 10 | 2 | mg/kg | - | - | - | < 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 |
| Chromium (Cr) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 10 | | 10 | | 10 | 1 | mg/kg | - | - | - | 7 |
| Copper (Cu) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 10 | | 10 | | 10 | 1 | mg/kg | - | - | - | 1 |
| Nickel (Ni) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 10 | | 10 | | 10 | 1 | mg/kg | - | - | - | 5 |
| Mercury (Hg) | FR | F5 | DIN EN ISO 12846 (E12): 2012-08 | | 0.1 | | 0.1 | | 0.1 | 0.05 | mg/kg | - | - | - | < 0.05 |
| Zinc (Zn) | FR | F5 | DIN EN ISO 17294-2 (E29): 2017-01 | | 100 | | 100 | | 100 | 1 | mg/kg | - | - | - | 9 |
| Ash melting behaviour (ox. atmo.) 815°C | | | | | | | | | | | | | | | |
| Shrinkage start temp SST | FR | F5 | DIN EN ISO 21404: 2020-06 | | 11) | | 11) | | 11) | | °C | - | - | - | 1070 |
| Deformation temp DT | FR | F5 | DIN EN ISO 21404: 2020-06 | | ≥ 1200 | | ≥ 1100 | | ≥ 1100 | | °C | - | - | - | 1450 |
| Hemisphere temp HT | FR | F5 | DIN EN ISO 21404: 2020-06 | | 11) | | 11) | | 11) | | °C | - | - | - | > 1470 |
| Flow temp FT | FR | F5 | DIN EN ISO 21404: 2020-06 | | 11) | | 11) | | 11) | | °C | - | - | - | > 1470 |
| Special analyses | | | | | | | | | | | | | | | |
| Plausibility check | FR | | | | | | | | | | | - | - | OK | - |

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

¹⁾ (qV, gr) gross calorific value at constant volume

²⁾ (qp, net) net calorific value at constant pressure

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.

- ³⁾ 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).
- ⁴⁾ Value to be stated.
- ⁵⁾ 3,15 - 40 mm; A maximum of 1% of the pellets may be longer than 40 mm. No pellets longer than 45 mm are allowed.
- ⁶⁾ 6 ± 1 mm, 8 ± 1 mm
- ⁷⁾ The limit value is 10.0 % (w/w).
- ⁸⁾ The required significance of the limit values 0.70/1.20/2.00 can not be represented with the prescribed analytical method.
- ⁹⁾ The limit value is ≥ 98.0 % (w/w).
- ¹⁰⁾ qp,net: net calorific value at constant pressure
- ¹¹⁾ 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.