

SGS Institut Fresenius GmbH Goerzallee 305A D-14167 Berlin GERMANY

SGS Portugal S.A.
Pólo Tecnológica de Lisboa, Lote 6
1600-546 LISBOA
PORTUGAL

Test report 6138135

Order no. 6406718

Client no. 5980000



Mr. Oliver Sommer
Phone +49 30/84718 – 220
Fax +49 30/84718 – 299
oliver.sommer@sgs.com

Industries & Environment

SGS Institut Fresenius GmbH
Goerzallee 305A
14167 Berlin

Berlin, 30.12.2022

Your project: NUTRIGUIAR, J20.0318.CBE.POR
Your order no.: Miguel Correia
Date of order: 09.11.2022

Testing period from 25.11.2022 until 29.12.2022
First sample no. 221303236
Sample entry 24.11.2022

SGS Institut Fresenius GmbH

i.V. Oliver Sommer
Customer Service

i.V. Maria Georgileas
Customer Service

NUTRIGUIAR, J20.0318.CBE.POR
Miguel Correia

Test report 6138135
Order no. 6406718

Page 2 of 3
30.12.2022

Sample matrix: Biofuel
Sample delivery: Sample sent on behalf of the client
Sampling by: Unknown
Sample entry: 24.11.2022
Testing period: 25.11.2022 until 29.12.2022

Sample no.:
Sample name:

221303236
NUTRIAGUIAR - INDUSTRIA DE SUBSTRATOS LDA,
Process nº J20.0318.CBE.POR, Ticket No. 1/2,
Sample 1, Wood pellets 6 mm,
AMOSTRA ENSACADO / SAMPLE BAG

Parameter	Unit	LOQ	Method	Result	Limit ENplus® ¹			Lab
					A1	A2	B	
Average diameter	Millimeter		DIN EN ISO 17829	6	6 or 8 ± 1			B1
Average length	Millimeter		DIN EN ISO 17829	14,4	3,15 to 40			B1
Overlengths > 40 and ≤ 45 mm	w-% ar		DIN EN ISO 17829	not found	≤ 1			B1
Overlengths > 45 mm	w-% ar		DIN EN ISO 17829	not found	not allowed			B1
Moisture	w-% ar	0,1	DIN EN ISO 18134-2	6	≤ 10			B1
Ash (550°C)	w-% d	0,1	DIN EN ISO 18122	0,43	≤ 0,7	≤ 1,2	≤ 2,0	B1
Mechanical Durability	w-% ar	0,1	DIN EN ISO 17831-1	99	≥ 98,0	≥ 97,5		B1
Fines	w-% ar	0,1	DIN EN ISO 18846	0,4	≤ 1 (≤ 0,5) ²			B1
Net CV, const. p	MJ/kg ar	0,5	DIN EN ISO 18125	18,05	≥ 16,5			B1
Net CV, const. p	kWh/kg ar	0,14	DIN EN ISO 18125	5,014	≥ 4,6			B1
Bulk density	kg/m³ ar	1	DIN EN ISO 17828	676	≥ 600 to ≤ 750			B1
Nitrogen	w-% d	0,1	DIN EN ISO 16948	0,12	≤ 0,3	≤ 0,5	≤ 1,0	B1
Sulphur total	w-% d	0,01	DIN EN ISO 16994	< 0,01	≤ 0,04	≤ 0,05		B1
Chlorine total	w-% d	0,01	DIN EN ISO 16994	0,016	≤ 0,02		≤ 0,03	B1
Shrinkage starting temperature SST	°C		DIN CEN/TS 15370-1 ³	1210	-			-- ⁴
Deformation temperature DT	°C		DIN CEN/TS 15370-1 ³	1250	≥ 1200	≥ 1100		-- ⁴
Hemisphere temperature HT	°C		DIN CEN/TS 15370-1 ³	1280	-			-- ⁴
Flow temperature FT	°C		DIN CEN/TS 15370-1 ³	1300	-			-- ⁴
Arsenic	mg/kg d	0,5	DIN EN ISO 16968	< 0,5	≤ 1			B1
Cadmium	mg/kg d	0,3	DIN EN ISO 16968	< 0,3	≤ 0,5			B1
Chromium	mg/kg d	1	DIN EN ISO 16968	1	≤ 10			B1
Copper	mg/kg d	2	DIN EN ISO 16968	3	≤ 10			B1
Lead	mg/kg d	3	DIN EN ISO 16968	< 3	≤ 10			B1
Mercury	mg/kg d	0,05	DIN EN ISO 16968	< 0,05	≤ 0,1			B1
Nickel	mg/kg d	1	DIN EN ISO 16968	< 1	≤ 10			B1
Zinc	mg/kg d	1	DIN EN ISO 16968	13	≤ 100			B1

ar - result calc. to 'as received' state

d - result calc. to 'bone dry' state

LOQ - Limit of quantitation

1) Issue 3.0, August 2015

2) Limit is set for bulk pellets at factory gate or when loading trucks for deliveries to end-users; limit in parenthesis is set for sealed bags or sealed big bags

3) Determination was performed under oxidizing conditions. Pre ashing temperature was 815°C.

4) Analyses were performed by an accredited cooperation partner.

The laboratory locations of the SGS Group Germany according to the above abbreviations are listed at
<http://www.institut-fresenius.de/filestore/89/laborstandortkuerzels2.pdf>

NUTRIGUIAR, J20.0318.CBE.POR
Miguel Correia

Test report 6138135
Order no. 6406718

Page 3 of 3
30.12.2022

Sample matrix: Biofuel
Sample delivery: Sample sent on behalf of the client
Sampling by: Unknown
Sample entry: 24.11.2022
Testing period: 25.11.2022 until 29.12.2022

Summary of applied test methods:

DIN EN ISO 18846	2016-12
DIN EN ISO 17829	2016-03
DIN EN ISO 18134-2	2017-05
DIN EN ISO 18122	2016-03
DIN EN ISO 17831-1	2016-05
DIN EN ISO 18125	2017-08
DIN EN ISO 17828	2016-05
DIN EN ISO 16948	2015-09
DIN EN ISO 16994	2016-12
DIN CEN/TS 15370-1	2006-12
DIN EN ISO 16968	2015-09

*** End of test report ***

This document is issued by the Company subject to its General Conditions of Service (www.sgsgroup.de/agb). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. This document is an original. If the document is submitted digitally, it is to be treated as an original within the meaning of UCP 600. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
Comment: The sample(s) to which the findings recorded herein (the "Findings") relate was (were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.