

## CERTIFICATE OF ANALYSIS

Description : Coconut Shell Charcoal Briquette  
 Shipper : PT. Aracoco Global Industri  
 RT. 01, RW. 01, Bendo, Ngawonggo, Ceper, Klaten,  
 Central Java, Indonesia  
 Sample Weight : 3.00 kgs  
 Date of Sampling : 21 December 2022  
 Place of Sampling : PT. Aracoco Global Industri, Warehouse  
 Date of Analysis : 23 December 2022

### Sampling

Samples were taken and prepared in accordance with SNI 19-0428-1998.

### Analysis

Analysis were performed at PT Carsurin Cikarang Laboratory (accreditation by KAN / National Accreditation Committee – Indonesia for ISO 17025:2017 Cert No. LP-415-IDN) in accordance with ASTM Standard. The results of our analysis are as follows:

Parameter	Unit	Results		Method
		Wet Basis	Dry Basis	
Moisture	Pct	7.70	-	ASTM D1762-84 (REAPPROVED 2021)
Ash Content	Pct	1.94	2.10	ASTM D1762-84 (REAPPROVED 2021)
Volatile Matter	Pct	14.84	16.08	ASTM D1762-84 (REAPPROVED 2021)
Fixed Carbon	Pct	75.52	81.82	By Calculation

This certificate refers solely to the analysis in accordance with the details described herein and does not certify any other matter, and is issued without prejudice.

Jakarta, 26 December 2022

**PT. CARSURIN**



**Dede Jemmi Supriadi**

Head of Laboratory

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**The analysis results are based on representative samples which are taken based on applied standards (Ref SNI 19-0428-1998 *Petunjuk Pengambilan Contoh Padatan*) during the inspection (or audit). This report is valid within 90 days from the date of testing.**



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Report No. : 220261.0202

## **SUBJECT**

Evaluation of "Coconut Shell Charcoal Briquette" Sample for Self-Heating Substance Test

## **CUSTOMER**

PT. Aracoco Global Industri  
RT. 01, RW. 01, Bendo, Ngawonggo, Ceper, Klaten,  
Central Java, Indonesia

## **SAMPLING DATE**

21 December 2022

## **DESCRIPTION OF SAMPLE**

Coconut Shell Charcoal Briquette

## **DATE OF TESTING**

23 December 2022 up to 25 December 2022

**The analysis results are based on representative samples which are taken based on applied standards (Ref SNI 19-0428-1998 Petunjuk Pengambilan Contoh Padatan) during the inspection (or audit). This report is valid within 90 days from the date of testing.**



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**METHOD OF TEST**

The self heating substances test was performed according to United Nations "Recommendations on the Transport Dangerous Good, Manual of Test and Criteria" (33.4.3.3.1) as per revised UN test manual 7<sup>th</sup> edition 2019. Self heating substances, using method of UN 33.4.6 "Test N.4: Test method self-heating substances".

A consignment of carbon if it passes the tests for self-heating substances as reflected in the United Nations Manual of Tests and Criteria (see 33.4.3.3), and is accompanied by a certificate from a laboratory accredited by the competent authority, stating that the product to be loaded has been correctly sampled by trained staff from that laboratory and that the sample was correctly tested and has passed the test.

The sample received was placed into a 100 mm cubic mesh sample container made of stainless steel. The container was then hung at the centre of the oven. The oven temperature was slowly raised to 140<sup>o</sup> C and kept constant for 24 hours. The temperature at the centre of the sample and temperature between the container and oven were recorded continuously.

**RESULT**

Table 1: Analysis result for "Coconut Shell Charcoal Briquette" sample

Sample	Oven Temperature (°C)	Cube Size (mm)	Maximum Temperature Reached (°C)	Result
Coconut Shell Charcoal Briquette	140	100	200.7	Positive
Coconut Shell Charcoal Briquette	140	25	140.2	Negative
Coconut Shell Charcoal Briquette	120	100	122.9	Negative

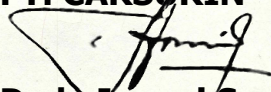
The above result showed that the "Coconut Shell Charcoal Briquette" sample shall not be classified in self heating substances and the substance is to be contained in packages of not more than 3 m<sup>3</sup>.

**Remark**

The temperature profiles were enclosed in next pages for your references. T1 represented temperature in the center of the sample. T2 represented temperature between the container and the oven wall.

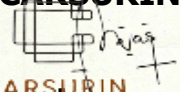
Jakarta, 26 December 2022

**PT. CARSURIN**



**Dede Jemmi Supriadi**  
Head of Laboratory

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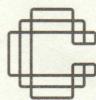


**Amran Lesmana**  
Head of Technical Charcoal

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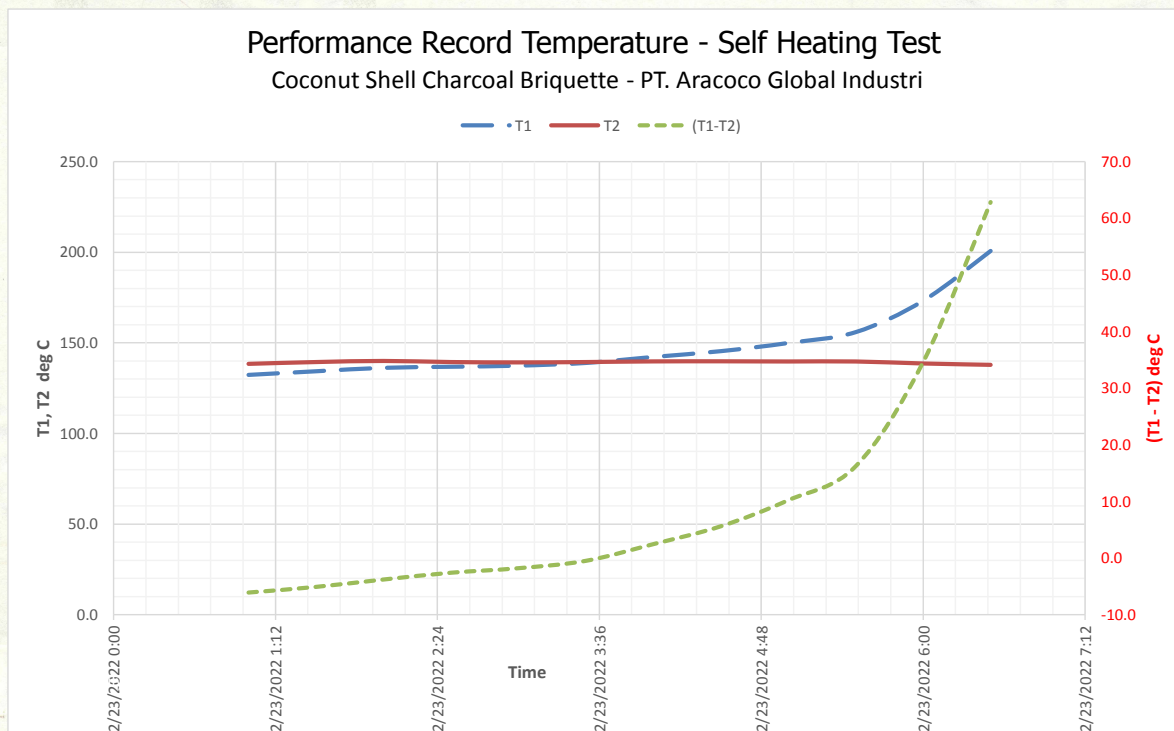
Temperature Profile "Coconut Shell Charcoal Briquette" at 140<sup>0</sup> C (100mm cube)

Start Time : 23-Dec-22 1:00:00  
 Stop Time : 23-Dec-22 6:30:00  
 Elapsed Time : 5:30:00  
 Interval : 0:30:00  
 Total Readings : 12  
 Thermocouple Type : K  
 Scaling : (None)

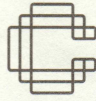
Temperature	Max Time Stamp	Max	Average	Min	Min Time Stamp
T1	12/23/2022 6:30	200.7	148.6	132.3	12/23/2022 1:00
T2	12/23/2022 2:00	140.0	139.3	137.9	12/23/2022 6:30
T1-T2	12/23/2022 6:30	62.9	9.3	-6.1	12/23/2022 1:00

Remark:

T1 represented temperature in the centre of the sample. T2 represented temperature between the container and the oven wall.



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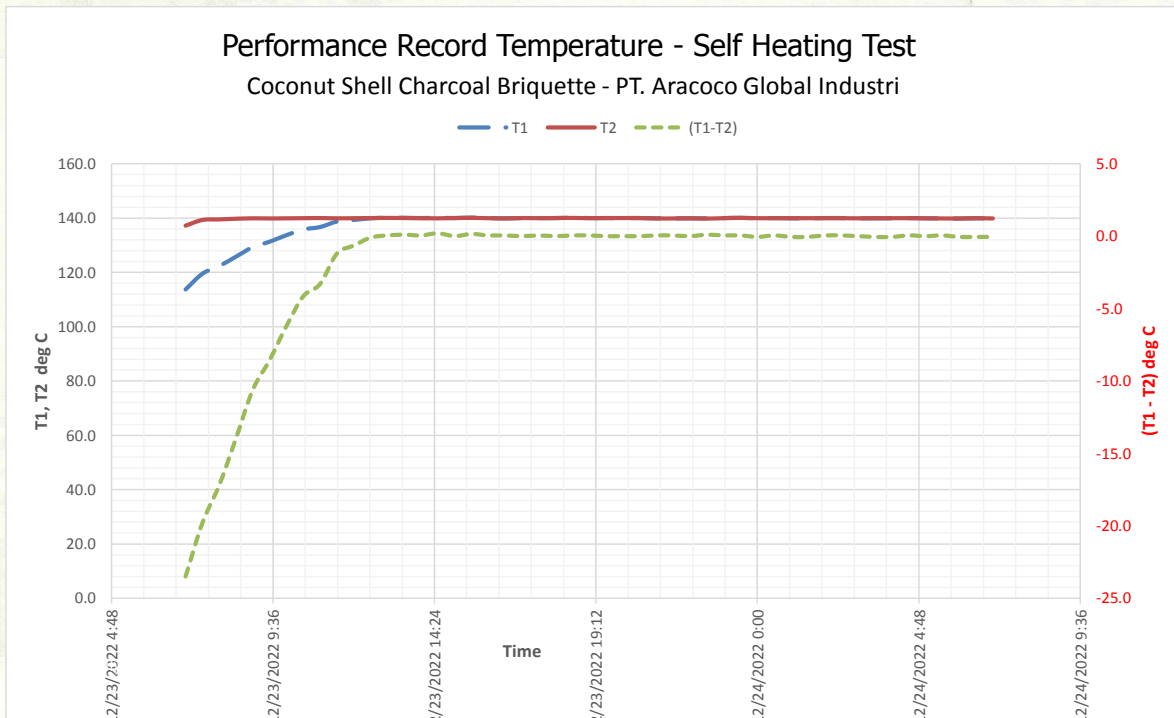


### 24 Hours Temperature Profile "Coconut Shell Charcoal Briquette" at 140<sup>0</sup> C (25mm cube)

Start Time : 23-Dec-22 7:00:00  
 Stop Time : 24-Dec-22 7:00:00  
 Elapsed Time : 24:00:00  
 Interval : 0:30:00  
 Total Readings : 49  
 Thermocouple Type : K  
 Scaling : (None)

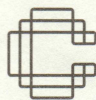
Temperature	Max Time Stamp	Max	Average	Min	Min Time Stamp
T1	12/23/2022 15:30	140.2	137.7	113.7	12/23/2022 7:00
T2	12/23/2022 13:00	140.1	139.9	137.2	12/23/2022 7:00
T1-T2	12/23/2022 14:30	0.2	-2.2	-23.5	12/23/2022 7:00

Remark:  
 T1 represented temperature in the centre of the sample. T2 represented temperature between the container and the oven wall.



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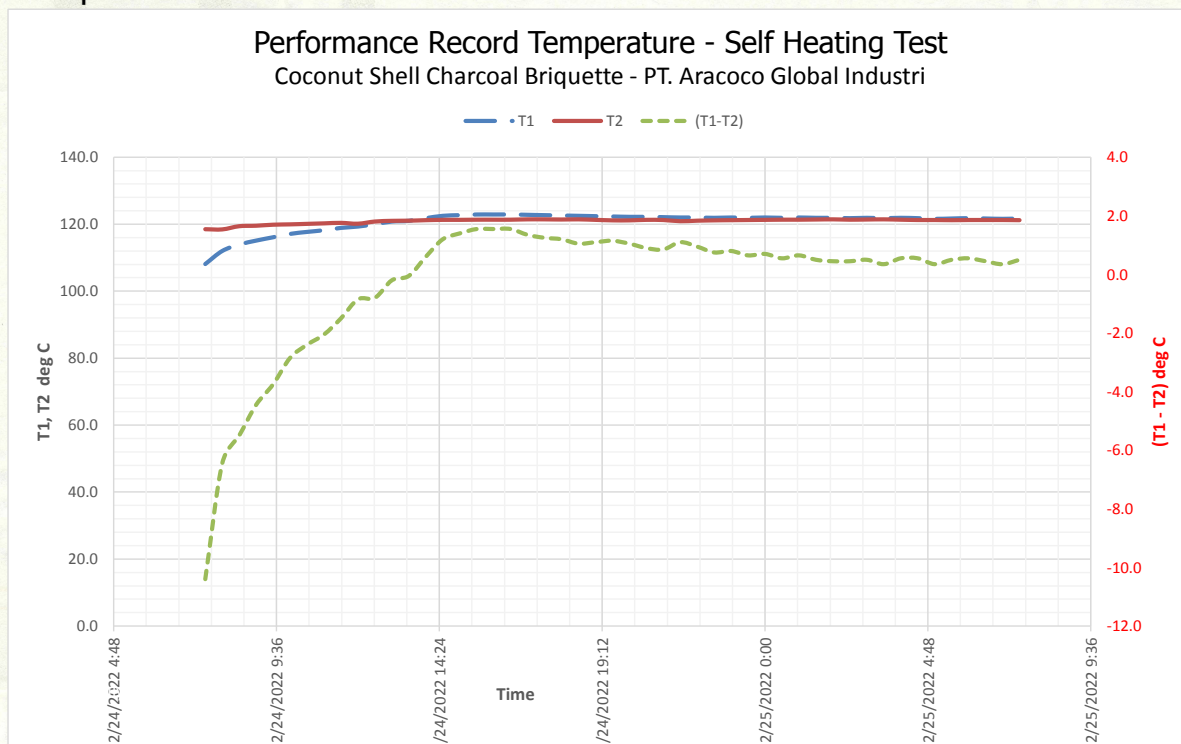


### 24 Hours Temperature Profile "Coconut Shell Charcoal Briquette" at 120<sup>0</sup> C (100mm cube)

Start Time : 24-Dec-22 7:30:00  
 Stop Time : 25-Dec-22 7:30:00  
 Elapsed Time : 24:00:00  
 Interval : 0:30:00  
 Total Readings : 49  
 Thermocouple Type : K  
 Scaling : (None)

Temperature	Max Time Stamp	Max	Average	Min	Min Time Stamp
T1	12/24/2022 15:30	122.9	120.7	108.1	12/24/2022 7:30
T2	12/24/2022 17:00	121.5	120.9	118.5	12/24/2022 7:30
T1-T2	12/24/2022 15:30	1.6	-0.2	-10.4	12/24/2022 7:30

Remark:  
 T1 represented temperature in the centre of the sample. T2 represented temperature between the container and the oven wall.



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