

SUBJECT

Evaluation of "Activated Carbon" Sample for Self-Heating Substance Test

CLIENT

PT. Kellen Mulia Diversity

Jl. Salemba Utan Barat No. 31 RT. 007 RW. 007,

Palmeriam, Matraman, Kota Adm. Jakarta Timur, DKI Jakarta

DATE OF RECEIVED SAMPLE

October 03rd, 2025

DESCRIPTION OF SAMPLE

Activated Carbon

DATE OF TESTING

October 06th Up To October 10th, 2025

The below findings are based on sample/s only, which is/are submitted or supplied by client. This report is valid within 90 days from the date of analysis.



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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 7th 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 33.3.1.3.3), 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° 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 "Activated Carbon" Sample

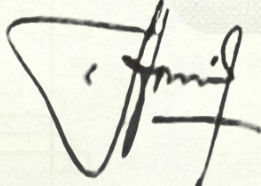
Sample	Oven Temperature (°C)	Cube Size (mm)	Maximum Temperature Reached (°C)	Result
Activated Carbon	140	100	142.2	Negative

The above result showed that the "Activated Carbon" sample shall not be classified in self heating substances.

Remark

The temperature profiles were enclosed in pages 3 for your references. T1 represented temperature in the center of the sample. T2 represented temperature between the container and the oven wall.

Jakarta, October 10th, 2025
PT. CARSURIN Tbk



Dede Jemmi Supriadi
Head of Laboratory

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Amran Lesmana
Head of Technical Charcoal

For verification of authenticity certificate or report, please e-mail to charcoal@carsurin.com

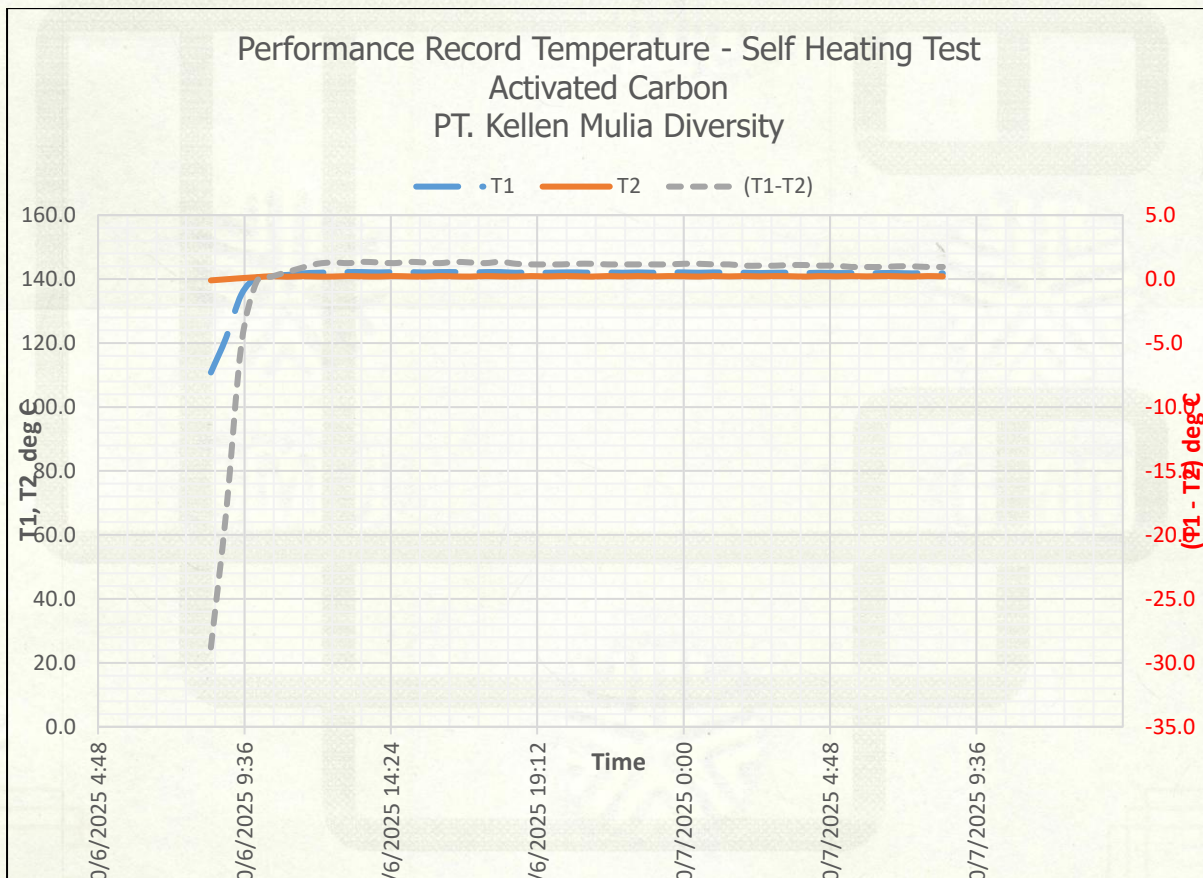


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24 Hours Temperature Profile "Activated Carbon" at 140° C (100mm cube)

Start Time : October 06th, 2025 08:30:00
Stop Time : October 07th, 2025 08:30:00
Elapsed Time : 24:00:00
Interval : 0:30:00
Total readings : 49
Thermocouple Type : K
Scaling : (none)

	Max Time Stamp	Max	Average	Min	Min Time Stamp
T1	10/6/2025 18:00	142.2	140.8	110.8	10/6/2025 8:30
T2	10/7/2025 8:00	141.0	140.8	139.6	10/6/2025 8:30
T1-T2	10/6/2025 18:00	1.3	0.0	-28.8	10/6/2025 8:30



Remark:

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



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2. The sample/s mentioned in this report is/are submitted or supplied by client.
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5. Unless otherwise stated, the tests were carried out in PT. CARSURIN Jl. Gaharu 1 Blok F2 No. 10 J, Multi Guna Niaga, Delta Silikon 3 Lippo Cikarang Bekasi



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REPORT OF ANALYSIS

Description : Activated Carbon
Manufactured / Shipper : PT. Kellen Mulia Diversity
Jl. Salemba Utan Barat No. 31 RT. 007 RW. 007,
Palmeriam, Matraman, Kota Adm. Jakarta Timur, DKI Jakarta
Sample Weight : 3.00 Kgs
Received Date : October 03rd, 2025
Date of Analysis : October 04th, 2025

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	2.61	-	ASTM D1762-84 (REAPPROVED 2021)
Ash Content	Pct	4.16	4.27	ASTM D1762-84 (REAPPROVED 2021)
Volatile Matter	Pct	3.59	3.69	ASTM D1762-84 (REAPPROVED 2021)
Fixed Carbon	Pct	89.64	92.04	By Calculation
Bulk Density	g/ml	0.604		ASTM D2854-09 (2019)
Hardness	Pct	98.07		ASTM D3802-23
Iodine Number	Mg/g	1036		D4607-14 (2021)

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, October 10th, 2025

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Dede Jemmi Supriadi

Head of Laboratory

For verification of authenticity certificate or report, please e-mail to charcoal@carsurin.com

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