



**Ranhill  
SAJ**

# **SPECIFICATION FOR POWDERED ACTIVATED CARBON USED FOR POTABLE WATER SUPPLY**

**MATERIAL REQUIREMENTS**

**SPECIFICATION SAJ CH/ PAC/ 001**

**(REV 5.0/09.2018)**

QUALITY ASSURANCE DEPARTMENT  
RANHILL SAJ SDN BHD

Ref. No. : CH/PAC/001

Date : 26/9/2018

Total Pages : 6/6

Approve by: .....  
Ass General Manager Quality Management

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## SPECIFICATION FOR POWDERED ACTIVATED CARBON USED FOR POTABLE WATER SUPPLY

### 1.0 General

- 1.1 Features required are as follows or otherwise the specification MS 873:2005, Malaysian Standard for Powdered Activated Carbon used for Potable Water Supply shall be used.

### 2.0 Features required

- 2.1 Powdered Activated Carbon used for Potable Water Supply shall comply with requirements as specified in **Table 1-Product Specification**.

**Table 1 – Product Specification**

Parameter	Requirements	Test Method
<b>A. Specific requirement</b>		
	<b>Limit</b>	
Iodine number, mg/g product	900 min	EN 12902:1999
<b>B. Impurity</b>		
Water soluble matter, %(w/w)	3.0 max	EN 12902:1999
Moisture, %(w/w)	5 max	
Ash, %(w/w)	10 max	
Zinc, %(w/w)	0.002 max	
<b>C. Physical Requirement</b>		
Pass through 150µm sieve, %(w/w)	95 min	Annex B
<b>D. Water-extractable toxic substance</b>		
	<b>Max Limit, mg/kg of product</b>	<b>Test Method</b>
Arsenic (As)	50	Annex C
Cadmium (Cd)	5	
Nickel (Ni)	50	
Lead (Pb)	50	
Chromium (Cr)	50	
Mercury (Hg)	1	
Selenium (Se)	10	
Antimony (Sb)	10	
Cyanide (CN)	50	
PAH*	0.2	
*Polycyclic aromatic hydrocarbons : The sum of the detected concentrations of fluoanthene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (a) pyrene, benzo (ghi) perylene, indenol (1,2,3-cd) pyrene.		

- 2.2 Physical properties of Powdered Activated Carbon used for potable water supply as follows in Table 2-Physical Properties.

**Table 2 – Physical Properties**

No.	Physical Properties	Descriptions
1.	Appearance	i. Black
2.	Solubility	i. Non-soluble
3.	Density	i. Approximately 2.1 g/cm <sup>3</sup> ii. Bulk density between 0.2 g/cm <sup>3</sup> to 0.75 g/cm <sup>3</sup> .

- 2.3 Powdered Activated Carbin shall not contain any impurities and additives.

### 3.0 Test and Inspection

- 3.1 All Powdered Activated Carbon shall comply with test in accordance with the requirement of specification.

### 4.0 Packing and Storage

- 4.1 Powdered Activated Carbon shall be labeled with some means of identification.
- 4.2 For storage purpose, Powdered Activated Carbon shall be stored in a building or compartment that is fire resistant.

### 5.0 Mandatory Marking

- 5.1 Each bag of Powdered Activated Carbon shall be mark legibly. The marking shall include the following :-
- “Powdered Activated Carbon”, trade name and grade/type
  - Net weight
  - Name, address and telephone number or supplier and/or manufacturer
  - Batch number
  - Date of manufacturing or packaging and shall bear such other markings as required by applicable laws
  - Any other markings as required by applicable laws.

## 6.0 Transportation and Labeling

- 6.1 No contamination of powdered activated carbon by toxic substances shall occur during transportation or storage.
- 6.2 Recommendations for appropriate materials of construction for the storage, handling and packaging of each specific product shall provide by supplier.
- 6.3 The product shall be categorized under the following transportation guidelines and labeling:
  - a) RID : Class 4.2 (UN 1362);
  - b) ADR : Class 4.2 (UN 1362);
  - c) IMO-IMDG : Class 4.2 (UN 1362); and
  - d) IATA : Prohibited.

## 7.0 Certificate of analysis

- 7.1 A certificate of analysis, with the indication of country of origin should accompany all deliveries for the chemical and be provided to Ranhill SAJ's.
- 7.2 The contents of the certificate of analysis shall include the following;
  - a) Iodine number, % (w/w);
  - b) Water soluble matter, (w/v);
  - c) Moisture content, % (w/w);
  - d) Ash content, % (w/w) and
  - e) Sizing passing through 150 $\mu$ m sieve, % (w/w).

## 8.0 Pre-delivery Inspection and Evaluation

- 8.1 It is the responsibility of the tenderer to inform SAJ Ranhill for inspection purposes during manufacturing and before delivery.
- 8.2 SAJ Ranhill reserve the right to inspect and witness the testing of product offered without any prior notice.
- 8.3 At anytime, when requested, the supplier is to provide SAJ Ranhill a sample of the product offered for evaluation purposes. All costs shall be borne by the supplier.
- 8.4 If at any time the supplier fails to deliver the required sample, the products is deemed fail to meet the specification.

## 9.0 Certification

- 9.1 Manufacturer and/or supplier of the product are required to provide the copy of the certificate and testing report from SIRIM, IKRAM and SPAN or other recognize certification bodies.
- 9.2 Tests report required should be those tests conducted within a year period.
- 9.3 SAJ Ranhill has the right to refuse offer or reject supply if those documents required are not enclosed or results provided are not complied with SAJ Ranhill requirement.