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IS 8366 (1989): Activated carbons, powdered [CHD 1:  
Inorganic Chemicals]



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“Knowledge is such a treasure which cannot be stolen”



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IS 8366 : 1989  
( Reaffirmed 1994 )

*Indian Standard*  
**ACTIVATED CARBONS,  
POWDERED — SPECIFICATION**  
*( First Revision )*

**भारतीय मानक**  
सक्रियित कार्बन, क्षुणित — विशिष्ट  
( पहला पुनरीक्षण )

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**BUREAU OF INDIAN STANDARDS**  
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NEW DELHI 110002

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**Price Group 1**

## FOREWORD

This Indian Standard ( First Revision ) was adopted by the Bureau of Indian Standards on 20 October 1989, after the draft finalized by the Inorganic Chemicals ( Misc ) Sectional Committee had been approved by the Chemical Division Council.

There are two types of activated carbons, namely, powdered and granular. Powdered activated carbons are used for decolourizing vegetable oils, sugar solutions, pharmaceuticals, etc. Granular activated carbons are used for absorption of obnoxious gases in industry, water purification, solvent recovery, in respirators and cigarette filters and as catalyst carrier. The specification for granular carbons is covered under a separate Indian Standard namely IS 2752 : 1989 'Activated Carbons, Granular ( *second revision* )'.

This standard was first published in 1977. The Sectional Committee responsible for the preparation of this standard decided to revise it modifying the requirements of moisture, ash, matter, ash, and matter soluble in water, for Type 1, Type 2 and Type 3 material. pH of Type 3 and decolorizing power content of Type 2 and Type 3 material have also been modified.

In addition three new requirements namely, chloride, sulphate and cyanogen compounds have been incorporated for Type 3 material.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## ACTIVATED CARBONS, POWDERED — SPECIFICATION

### ( First Revision )

#### 1 SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for powdered activated carbons.

#### 2 REFERENCES

2.1 The Indian Standards listed below are necessary adjuncts to this standard:

IS No.	Title
877 : 1989	For activated carbons, powdered and granular—methods of sampling and test ( <i>second revision</i> )
1260 ( Part 1 ) : 1973	Pictorial markings for handling and labelling goods: Part 1 Dangerous goods ( <i>first revision</i> )
2552 : 1979	Specification for steel drums ( galvanized and ungalvanized ) ( <i>second revision</i> )

#### 3 TYPES

3.1 There shall be three types of the material depending upon the end use:

- a) *Type 1* — for decolorizing vegetable oils, fats and waxes;
- b) *Type 2* — for decolorizing sugar solution, corn sugar solution; and
- c) *Type 3* — for decolorizing pharmaceuticals.

#### 4 REQUIREMENTS

##### 4.1 Description

The material shall be in the form of fine black powder, free from foreign matter.

4.2 The material shall conform to the requirements given in Table 1, when tested by the methods prescribed in IS 877 : 1989. Reference to the relevant clauses of IS 877 : 1989 is given in Col 6 of the table.

##### 4.3 Additional Requirements

Additional requirements for specific uses, if necessary, may be prescribed as agreed to between the purchaser and the supplier.

#### 5 PACKING, MARKING AND STORAGE

##### 5.1 Packing

Unless otherwise agreed to between the purchaser and the supplier, the material shall be packed in clean, sound, hermetically sealed steel drums ( *see* IS 2552 : 1979 ) or HDPE or hessian bags with polyethylene liner.

##### 5.2 Marking

The packages shall be legibly and indelibly marked with the following information:

- a) Name and type of the material;
- b) Net mass of the contents;
- c) Month and year of packing;
- d) Manufacturer's name and/or his recognized trade-mark, if any;
- e) Lot number to enable the batch of manufacture to be traced from records; and
- f) Appropriate symbol indicating the fire hazards [ *see* IS 1260 ( Part 1 ) : 1973 ]

##### 5.3 Storage

The material being potentially flammable, shall be stored in building or compartments which are as nearly fire proof as possible. Other oxidizing or flammable materials shall not be stored in the same building.

#### 6 SAMPLING

6.1 Representative samples of the material shall be drawn and adjudged as prescribed in 19 of IS 877 : 1989.

#### 7 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

7.1 Characteristics which are critical for various types are as follows:

Type	Characteristics ( <i>see</i> Table 1 )
Type 1	— vi, vii, viii
Type 2	— vi
Type 3	— v, vi, x, xi, xii and xiii.

**Table 1 Requirements for Activated Carbons, Powdered**  
( Clauses 4.2 and 7.1 )

SI No.	Characteristic	Requirements for			Method of Test ( Ref. to Cl No. of IS 877 : 1989 )
		Type 1	Type 2	Type 3	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Moisture, percent by mass, <i>Max</i>	15	15	15	4
ii)	Ash, percent by mass, <i>Max</i>	60	40	20	5
iii)	Matter soluble in water, percent by mass, <i>Max</i>	—	1.5	0.5	7
iv)	Matter soluble in acid, percent by mass, <i>Max</i>	6	6	2.5	8
v)	pH	5 to 8	5 to 8	6.5 to 7.5	9
vi)	Decolorizing power*, mg/g, <i>Min</i>	50	70	205	11
vii)	Oil retention, percent by mass, <i>Max</i>	30	—	—	12
viii)	Filterability, minutes, <i>Max</i>	46	—	—	12
ix)	Particle size:				
	a) passing through 150-micron IS Sieve, percent by mass, <i>Min</i>	100	100	95	6
	b) passing through 125-micron IS Sieve, percent by mass, <i>Min</i>	95	95	95	
	c) passing through 75-micron IS Sieve, percent by mass, <i>Min</i>	80	80	80	
x)	Iron ( as Fe ), percent by mass, <i>Max</i>	—	—	0.05	10
xi)	Chloride ( as Cl ), percent by mass, <i>Max</i>	—	—	0.35	16
xii)	Sulphate ( as SO <sub>4</sub> ), percent by mass, <i>Max</i>	—	—	0.8	17
xiii)	Cyanogen compounds	—	—	To pass the test	18

\* This requirement by methylene blue test is for guidance only. For specific uses for decolorization of vegetable oils, fats and waxes, sugar solutions and pharmaceuticals, specific requirements as agreed to between the purchaser and the supplier may be prescribed.

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