JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS B 9901 : 1997

Gas-removal — Method of test for performance of gas-removal filters

ICS 23.120

Descriptors : filters, air filters, performance testing

Reference number : **JIS B 9901 : 1997 (E)**

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently, JIS B 9901:1994 has been revised and replaced with this Standard.

Date of Establishment: 1978-03-01

Date of Revision: 1997-09-20

Date of Public Notice in Official Gazette: 1997-09-22

Investigated by: Japanese Industrial Standards Committee
Divisional Council on General Machinery

JIS B 9901 : 1997, First English edition published in 1998-01

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents, the original JIS is to be the final authority.

Printed in Japan

JAPANESE INDUSTRIAL STANDARD JIS B 9901 : 1997

Gas-removal—Method of test for performance of gas-removal filters

1 Scope This Japanese Industrial Standard specifies the method of test for performance of gas-removal filters (1) used for air conditioning and ventilation for removing specific harmful gases contained in the ambient air constituting the living environment and work environment.

Note (1) Gas-removal filters are classified into panel form and winding form by the shape, and the charged contents are classified as follows by the kind of the harmful gases.

Type	Structure	Use
Dry type	Adsorbent or absorbent packed panel form	High concentration and low concentration
	Adsorbent or absorbent affixing panel form	Low concentration
	Adsorbent or absorbent affixing winding form	Low concentration

Remarks : Normative references are shown in Attached Table 1.

2 Definitions For the purpose of this Standard, the following definitions apply.

(1) **rated gas quantity** A marked gas quantity of a filter which is converted to standard condition (20°C in temperature, and 1.013×10^3 hPa in atmospheric pressure). It is expressed by m^3/min.

(2) **pressure loss** A total pressure difference between the upstream side and the downstream side of a filter. It is expressed by Pa.

(3) **testing clean air** Air which is supplied in a test, which, preferably, keeps cleanliness given in Table 1.

Table 1 Testing clean air

Item	Condition
Temperature	23 ± 3°C
Relative humidity	55 ± 10%RH
Dust concentration	0.15 mg/m^3 or under (2)
Gas concentration	Not exceeding environmental reference value established in Basic Law for Environmental Pollution Control (3)

Notes (2) A concentration measured according to a measuring method designated in Law and enforcement regulations for maintenance of sanitation in buildings.

(3) For gases not specified in the environmental standard, cleanliness having no

influence to the test shall be kept.

(4) **equilibrium ventilation** Making the temperature and humidity of a filter under an equilibrium state by ventilating testing clean air at a rated gas quantity for 2 h.

(5) **gas-removal efficiency** A ratio of difference of gas concentration between the upstream side and the downstream side to a gas concentration on the upstream side of a filter obtained in the case of operation at a rated gas quantity. It is expressed by percentage (%).

(6) **gas removing capacity** A gas quantity adsorbed or absorbed until the gas-removal efficiency of a filter lowers to 85% of an initial gas removal efficiency. It is expressed by liter (l).

3 Test items The items for the performance test of a filter shall be as follows:

(1) Pressure loss test

(2) Gas-removal efficiency test

(3) Gas removing capacity test

4 Classification and concentration of test gases The classification and concentration of test gases shall be as given in Table 2, and their tolerance range shall be ± 10 % of the values given in Table 2.

Table 2 Classification and concentration of test gases

Classification of test gas	Concentration of test gas (ppm)	
	When gas-removal efficiency is tested	When gas removing capacity is tested
Sulfur dioxide SO_2	0.5	20
Hydrogen chloride HCl	10	100
Ammonia NH_3	10	100
Carbon monoxide CO	50	1000
Nitrogen oxides NO_x (NO_2, NO) (4)	0.5	10
Chlorine Cl	1	10
Ozone O_3	0.5	—
Toluene $C_6H_5CH_3$	3	1000
Acetone CH_3COCH_3	50	1000
Formaldehyde HCHO	1	10
n-Butane $CH_3(CH_2)_2CH_3$	50	1000
Hydrogen sulfide H_2S	1	20
Fluorine compound HF	0.02	0.2

Note (4) NO_2 and NO shall be used individually.