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

ICS 23.120

Descriptors : filters, air filters, performance testing

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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.

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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 m³/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 $\pm 10\%$ 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) ⁽¹⁾	0.5	10
Chlorine Cl	1	10
Ozone O ₃	0.5	—
Toluene C ₆ H ₅ CH ₃	3	1000
Acetone CH ₃ COCH ₃	50	1000
Formaldehyde HCHO	1	10
<i>n</i> -Butane CH ₃ (CH ₂) ₂ CH ₃	50	1000
Hydrogen sulfide H ₂ S	1	20
Fluorine compound HF	0.02	0.2

Note ⁽¹⁾ NO₂ and NO shall be used individually.