

JIS

JAPANESE INDUSTRIAL STANDARD

**Measuring methods for the specific
surface area of fine ceramic powders by
gas adsorption using the BET method**

JIS R 1626^{—1996}

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In the event of any doubt arising,
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Measuring methods for the specific
surface area of fine ceramic powders by
gas adsorption using the BET method

R 1626-1996

1. Scope This Japanese Industrial Standard specifies the methods for measuring the specific surface area of fine ceramic powders from the amount of adsorption of gas monomolecular layer on the surface of fine ceramic powders at liquid nitrogen temperature.

Remarks: The following standards are cited in this Standard:

JIS K 0114 General rules for gas chromatographic analysis

JIS R 1600 Glossary of terms relating to fine ceramics

2. Definitions For the purpose of this Standard, the definitions given in JIS R 1600 and the following definitions apply:

- (1) adsorption Such a phenomenon that gas molecules are staying on particle surface of powders.
- (2) physical adsorption Such a phenomenon that gas molecules are staying on particle surface of powders due to physical interaction.
- (3) chemical adsorption Such a phenomenon that gas molecules are staying on particle surface of powders due to chemical interaction.
- (4) adsorbate Gas molecules adsorbed on powders.
- (5) adsorption isotherm A curve which shows the relation between the pressure or relative pressure of a gas at adsorption equilibrium under a constant temperature and the amount of adsorption.
- (6) amount of monomolecular layer adsorption Amount of adsorption necessary for covering completely the particle surface of powders with one layer of adsorbed molecules.
- (7) specific surface area Surface area of the powder of unit mass.
- (8) dead volume Volume of continuous space in adsorption measuring apparatus where the adsorbate coexists with the specimen, in a state of gas without adsorbed.
- (9) BET method Analyzing method for the specific surface area of powders based on the BET formula derived from multimolecular layer adsorption theory presented by three persons of Brunauer, Emmett and Teller.
- (10) molecular cross section Area on the powder surface occupied by one molecule of the adsorbate when the adsorbate is adsorbed on the powder surface.