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JAPANESE INDUSTRIAL STANDARD

Testing method for Vickers hardness of fine ceramics at elevated temperatures

JIS R 1623—1995

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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fine ceramics at elevated temperatures

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1. **Scope** This Japanese Industrial Standard specifies the testing method for Vickers hardness at elevated temperatures of at most 1300°C of dense fine ceramics used principally for mechanical, thermal, and chemical applications.

Remarks: The following standards are cited in this Standard.

JIS B 7725 Vickers hardness testing machines

JIS B 7734 Micro hardness testing machines for Vickers and Knoop hardness

JIS R 1610 Testing method for Vickers hardness of high performance ceramics

JIS Z 8401 Rules for rounding off of numerical values

2. **Definitions** For the main terms used in this Standard, the following definitions apply.

- (1) **hardness at elevated temperature** A hardness obtained by forming a dent at a specific temperature exceeding room temperature.
- (2) **Vickers hardness** A value by dividing a test load when a test surface is indented by using a diamond regular quadrangular pyramid indenter of 136° angle between the opposite faces by a surface area obtained from the diagonal lengths of the dent.
- (3) **hardness symbol** A symbol wherein a numerical value proportional to a test load is suffixed to a Vickers hardness symbol HV.

Correspondence of hardness symbol to test load shall be as given in Table 1.

Table 1. Correspondence of hardness symbol to test load

Hardness symbol	Test load N	Hardness symbol	Test load N	Hardness symbol	Test load N
HV0.01	0.098 07	HV0.2	1.961	HV2.5	24.52
HV0.02	0.196 1	HV0.3	2.942	HV3	29.42
HV0.025	0.245 2	HV0.5	4.903	HV5	49.03
HV0.05	0.490 3	HV1	9.807	HV10	98.07
HV0.1	0.980 7	HV2	19.61	HV20	196.1

- (4) **test temperature is measured.** A test surface temperature of a sample when hardness is measured.