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JIS H 4461 : 2002
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**Tungsten wires for lighting and
electronic equipments**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by the Japan Tungsten & Molybdenum Industries Association (JTMIA)/the Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS H 4461 : 1989** is replaced with this Standard.

In this revision, review in all its aspects, addition of calculation method for purity of tungsten and the item of “terms and definitions”, description of diversified usage, and securing of conformity with the revision of **JIS H 4460** were conducted.

Date of Establishment: 1964-07-01

Date of Revision: 2002-03-20

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Standards Board

Technical Committee on Non-Ferrous
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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Tungsten wires for lighting and electronic equipments

1 Scope This Japanese Industrial Standard specifies the tungsten wires (hereafter referred to as “wires”), used for filament, heater, grid, spring, anchor, support, discharge cut wire, heater for vacuum evaporation and the like of lighting and electronic equipments. However, this Standard applies to wires and rods having a circular cross-section only.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions (including amendments) of the standards indicated below shall be applied.

JIS H 1403 *Methods for chemical analysis of tungsten materials*

JIS H 4460 *General rules for test of tungsten and molybdenum materials for lighting and electronic equipments*

3 Definitions Definitions for principal terms used in this Standard shall be as follows.

- a) **classification between wires and rods** Wires and rods are not classified by diameter. Those wound on a reel and the like and those bundled in a hoop state are generally called wires. Those not wound are called rods.
- b) **thickness** The thickness of wires is represented by diameter (mm). However, the thickness of wires may be represented by MG⁽¹⁾ as occasion demands.

Note ⁽¹⁾ MG is a numerical value representing in milligrams the mass of a wire of 200 mm in length.

$$MG = 3\,016 \times D^2$$

where, D : diameter of wire (mm)

- c) **average value of thickness** Thickness of both ends of a wire is measured at two or more positions to be represented by its arithmetic mean.
- d) **tolerance on thickness** The range of the average value of thickness allowable for the same kind.
- e) **difference of thickness** The difference between thicknesses at both ends of a wire, represented by the following formula.

$$T = \frac{\frac{A - B}{A + B}}{2} \times 100$$

where, T : difference of thickness (%)

A : maximum thickness measured at both ends (mm or MG)

B : minimum thickness measured at both ends (mm or MG)