

JIS

JAPANESE INDUSTRIAL STANDARD

Testing method for thermo- electromotive force of metallic resistance materials

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Testing method for thermo-electromotive force of
metallic resistance materials C 2527-1994

1. **Scope** This Japanese Industrial Standard specifies testing method for thermo-electromotive force of metallic resistance materials and the like in a temperature range of about -40°C to $+250^{\circ}\text{C}$.

Remarks: The following standards are cited in this Standard:

JIS C 1602 Thermocouples

JIS Z 8703 Standard atmospheric conditions for testing

JIS Z 8710 Temperature measurement — General requirement

2. **Definitions** For the purpose of this Standard the following principal definitions apply:

- (1) **metallic resistance materials** Conductive metallic materials whose electrical resistance characteristics are utilized.
- (2) **thermocouple** An element consisting of conductors of two kinds, one end of a conductor is connected to one end of another conductor, for the purpose of producing thermo-electromotive force.
- (3) **leg of thermocouple** Each of the conductors of two kinds composing a thermocouple. It is also called simply "leg".
- (4) **measuring junction** The junction of element wires of a thermocouple that is to be placed at a position of temperature measurement (refer to JIS C 1602).
- (5) **reference junction** The junction between the thermocouple and copper lead, or thermocouple compensation wire and copper lead which is intended to be maintained at a constant temperature (for example, "ice point").
- (6) **temperature fixed point device** A device which prepares the temperatures of the defining fixed points, secondary reference point and other reference points specified in JIS Z 8710, for testing characteristics of thermocouples or the like.
- (7) **standard platinum wire and standard copper wire** Platinum wire or copper wire which is used as the opposite leg when forming a thermocouple in combination with a test piece.
- (8) **copper lead** A copper conductor which connects reference junction and measuring apparatus.
- (9) **thermo-electromotive force to platinum** The thermo-electromotive force which generates corresponding to the difference between the temperatures of the measuring junction and the reference junction of a thermocouple formed by the test piece and standard platinum wire. The polarity is called positive when the e.m.f. is in the direction to platinum at the reference junction, and negative when the direction is opposite.