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General rules for thermal analysis

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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 Japan Analytical Instruments Manufacturers' Association (JAIMA)/ 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 K 0129** : 1994 is replaced with this Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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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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Contents

General rules for thermal analysis

1 Scope This Japanese Industrial Standard specifies the general rules for thermal analysis carried out using differential thermal analyzer, differential scanning calorimeter, apparatus for thermogravimetry, apparatus for thermomechanical analysis and apparatus for dynamic mechanical analysis.

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

JIS K 0050 *General rules for chemical analysis*

JIS K 0215 *Technical terms for analytical chemistry (analytical instrument part)*

JIS K 7115 *Plastics—Determination of creep behaviour—Part 1: Tensile creep*

JIS K 7121 *Testing methods for transition temperatures of plastics*

JIS K 7161 *Plastics—Determination of tensile properties—Part 1: General principles*

JIS K 7244-1 *Plastics—Determination of dynamic mechanical properties—Part 1: General principles*

3 Definitions For the purpose of this Standard the definitions given in **JIS K 0050**, **JIS K 0215**, **JIS K 7115**, **JIS K 7121** and **JIS K 7244-1** and the following definitions apply.

a) **thermal analysis: TA** a generic term for the series of techniques to measure the physical properties of a substance as the function of temperature, while the temperature of the substance including the reaction products is being changed in accordance with a specified program

b) **differential thermal analysis: DTA** a method to measure the thermal difference between sample and reference material as the function of temperature, while the temperature of both the sample and reference material is being changed in accordance with a specified program

c) **differential scanning calorimetry: DSC** a generic term for the following measuring methods:

   1) **input compensation type differential scanning calorimetry** (**input compensation type DSC**) a method to measure the input difference of heat energy, as the function of temperature, applied on sample and reference material per unit time so as to make their temperature equal, while the temperature of sample part, composed of the sample and reference material, is being changed in accordance with a specified program

   2) **heat flux type differential scanning calorimetry** (**heat flux type DSC**) a method to measure the temperature difference between sample and reference material, as the function of temperature, while the temperature of sample part, composed of the sample and reference material, is being changed in accordance with a specified program