UDC 543.422

JIS

JAPANESE INDUSTRIAL STANDARD

General rules for X-ray diffractometric analysis

JIS K 0131–1996

Translated and Published

by

Japanese Standards Association

Printed in Japan

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

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association.

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Errata are also provided to subscribers of JIS (English edition) in *Monthly Information*.

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General rules for X-ray diffractometric analysis

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1. Scope This Japanese Industrial Standard specifies the general rules for the measurements of diffracted X-ray using a X-ray diffractometer in order to make the identification and determination, the accurate measurement of lattice constant, and the measurement of crystallinity degree, of substances.

Remarks 1. The standards cited in this Standard are as follows:

JIS K 0050 General rules for chemical analysis

JIS K 0119 General rules for X-ray fluorescence spectrometric analysis

JIS K 0211 Technical terms for analytical chemistry (general part)

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

JIS Z 9101 Safety colours and safety signs

JIS Z 9104 Safety signs — General specification

2. The units given in { } in this Standard are based on the traditional units, and are appended for informative reference.

2. Matters in common The matters in common shall follow JIS K 0050.

3. Definitions For the purpose of this Standard, in addition to the definitions in JIS K 0119, JIS K 0211, and JIS K 0215, the definitions given below apply.

(1) specimen rotation stage The specimen stage to uniform the influences of grain size on to the diffracted X-ray intensity by means of rotating the specimen around the axis vertical to measurement surface.

(2) fiber specimen stage Specimen stage to measure the orientation of fiber sample, film, etc. Generally, it has a mechanism to rotate the specimen around the axis which is vertical to the lengthwise direction of the specimen.

(3) monochrometor A spectrometer to carry out the selection of wavelength of X-ray.

(4) absorption effect (of X-ray) The decrement of diffracted X-ray intensity due to the absorption of X-ray in specimen.

(5) preferred orientation The phenomena that specific diffracted X-ray only is strongly observed because of the orientational inclination of crystallites toward special direction.

(6) reference material (for X-ray diffraction) A chemically stable and highly purified substance whose characteristic such as lattice constant has been accurately measured and which can be used for the standard of X-ray measurement or of analysis.

(7) lattice constants The constants by which the size and shape [the length of an edge and angle between edges] of unit lattice in a crystal are specified.