

JIS

JAPANESE INDUSTRIAL STANDARD

**Method for determination of
tantalum in steel**

JIS G 1236—1992

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Method for determination of tantalum
in steel

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1. Scope This Japanese Industrial Standard specifies the method for determination of tantalum in steel.

Remarks: The following standard is cited in this Standard.

JIS G 1201 General rules for chemical analysis of iron and steel

2. General requirements General requirements common to the method for determination shall be in accordance with JIS G 1201.

3. Method for determination The method for determination of tantalum in steel shall be in accordance with fluoride - Victoria Blue B extraction absorptiometric method. This method is applicable to the sample of 0.000 5 % (m/m) or over to and excluding 0.10 % (m/m) tantalum contents.

4. Fluoride - Victoria Blue B extraction absorptiometric method

4.1 Principle Decomposition of a test portion with a mixed acid of hydrochloric and nitric acids. Addition of hydrofluoric acid, sulfuric acid and phosphoric acid, and fuming of sulfuric acid. Addition of hydrofluoric acid changes tantalum into fluoride add Victoria Blue B, and formation of coloured complex. Extraction of the coloured complex in benzene and measurement of its absorbance.

4.2 Reagents The reagents shall be as follows:

- (1) Hydrofluoric acid
- (2) Hydrofluoric acid (38+62)
- (3) Sulfuric acid (1+1)
- (4) Phosphoric acid (1+1)
- (5) Mixed acid (3 parts of hydrochloric acid and 1 part of nitric acid)
- (6) Iron It is as high a purity as possible, which does not contain tantalum and boron, or of which the tantalum content is as low as possible and known, and of which the boron content is 40 ppm or under.
- (7) Washing solution Transfer 90 ml of sulfuric acid (1+1) to a polyethylene beaker (500 ml), and add 40 ml of phosphoric acid (1+1), 40 ml of hydrofluoric acid (38+62) and 150 ml of Victoria Blue B solution [(9)], and mix well. After cooling to ordinary temperature, dilute to 500 ml with water. Keep this solution in a polyethylene reagent bottle.
- (8) Ascorbic acid solution (20 g/l) Prepare this solution immediately before use.