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JIS

JAPANESE INDUSTRIAL STANDARD

Test method for volume fraction of fiber in metal matrix composites

JIS H 7401—1993

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

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Test method for volume fraction of fiber in metal matrix composites

H 7401-1993

1. Scope This Japanese Industrial Standard specifies the test method for volume fraction of fiber in metal matrix composites (hereafter referred to as "composites").

Remarks 1. This Standard may apply to particle reinforced metals using particles as a reinforcement.

In that case, "reinforced fiber" in this Standard shall be read as "reinforced particle".

2. This Standard shall be applied to composites of which the matrix can be dissolved with acid or alkali. For the dissolving solution, that which is easy to dissolve the matrix and difficult to erode reinforced fiber shall be selected.

3. The following standards are cited in this Standard:

JIS H 7006 Glossary of terms used in metal matrix composites

JIS R 3503 Glass apparatus for chemical analysis

JIS Z 8401 Rules for rounding off of numerical values

JIS Z 8807 Measuring methods for specific gravity of solid

2. Definitions For the main terms used in this Standard, the definitions given in JIS H 7006 apply.

3. Apparatus The principal apparatus used in this Standard shall be as follows:

(1) Balance A balance shall have precision of at least 0.1 mg in reciprocal sensibility.

(2) Crucible sintered glass filter A crucible sintered glass filter shall be as follows:

(a) For a diameter of reinforced fiber of under 5 μm, the crucible sintered glass filter G–4 specified in JIS R 3503 shall be used.

(b) For a diameter of reinforced fiber of 5 μm or over to and excluding 20 μm, the crucible sintered glass filter G–3 or G–4 specified in JIS R 3503 shall be used.

(c) For a diameter of reinforced fiber of at least 20 μm, the crucible sintered glass filter of a suitable fine pore size may be used.

(3) Desiccator A desiccator containing a desiccating agent shall be used.

(4) Beaker For a beaker, the tall beaker of 300 ml in capacity shall be used.

(5) Watch glass For watch glasses, those of 50 mm and 70 mm in diameter shall be used.

(6) Heating water tank

(7) Washing bottle