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**Packaging, marking, transport and storage for additive
manufacturing metal powder**

增材制造用金属粉末的包装、标志、运输和贮存

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Packaging, marking, transport and storage for additive manufacturing metal powder

1 Scope

This document specifies the packaging, marking, transportation and storage requirements for metal powder products used in additive manufacturing.

This document applies to the packaging, marking, transportation and storage of metal powder products for additive manufacturing.

2 Normative references

GB/T 191

GB/T 4456

GB/T 6388

GB/T 10004

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4.1 General rule

4.1.1 The packaging of the product shall prevent it from getting damp and contaminated during transportation and storage.

4.1.2 Products in the same box, bag, can or bottle shall be from the same batch. In special cases, when products from different batches are packed in the same box, they shall be packed in separate bags/cans/bottles and marked with product brand, batch number, particle size, weight and other information.

4.1.3 The weight and size of the unit package shall comply with the freight regulations of the relevant carrier department.

4.1.4 When product standards or order forms have special packaging requirements, the

packaging method shall be implemented in accordance with the product standards or order

forms.

4.2.1 General rule

4.2.1.1 For products with a particle size less than 53 μm , packaging should be carried out in an inert gas atmosphere, such as an argon-filled glove box.

4.2.1.2 Products with a particle size of not less than 53 μm may be packaged in an atmospheric environment. In special cases, such as products with high sensitivity to O, N, H₂O, etc., packaging should be carried out in an inert gas atmosphere.

4.2.2.1 When packaging bags are used for packaging, double-layer vacuum packaging

shall be used and there shall be no air leakage after packaging. See Figure 1 for a schematic diagram and design sketch of the product packaging.

4.2.2.2 When products are packaged in plastic bags, the bags shall comply with the requirements of GB/T 10004, and the packaging quantity shall match the load-bearing capacity of the bags.

e) Net weight.

5.2 Outer packaging mark

Each product packaging box shall have an independent box tag or label, which shall indicate:

- a) Product brand;
- b) Specifications;
- c) Batch number;
- d) Net weight;
- e) Box number.

5.3 Transport mark

The transportation mark of the product shall comply with the provisions of GB/T 6388.

5.4 Special signs

Each packaging box shall have signs such as "Placement direction", "No rolling" and "Stacking layer limit", and shall be marked with signs such as "Moisture-proof" and "Rain-proof", and the graphics shall comply with the provisions of GB/T 191.

6.1 When transporting the product, attention shall be paid to preventing moisture and

corrosion.

6.2 When products are in transit at stations, docks, etc., they shall be stacked in the warehouse.

6.3 When unloading the product, avoid bumping or damaging the packaging box.

7 Storage

7.1 The product shall be stored in a ventilated, dry and clean warehouse and shall not be stored together with acids, alkalis, corrosives, flammable, explosive and active chemicals.

7.2 When storing products, fire-fighting equipment corresponding to the quantity of

stored products shall be provided.