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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 8643-2021

**Determination of lubricant content in lubricated metal-powder
mixes - Soxhlet extraction method**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents"

drafted:

This document replaces GB/T 8643-2002 "Determination of Lubricant Content in Lubricated Metal Powders, Revised Soxhlet

(Soxhlet) extraction method", compared with GB/T 8643-2002, in addition to structural adjustment and editorial changes, the main technical changes are as follows:

- a) Changed the description of the scope (see Chapter 1, Chapter 1 of the:2002 edition);
- b) Added the chapter "Normative References" (see Chapter 2);
- c) added the chapter "Terms and Definitions" (see Chapter 3);
- d) "Xylene" was added for organic solvents (see 5:3);
- e) added the automation system of Soxhlet extraction method (see 5:4);
- f) Deleted the content of blank test (see 5:1 of the:2002 edition);
- g) The description of weighing has been changed, and the content of ensuring that the filter paper is dry is added (see 7:1, 7:2, 5:2 and 5:3 of the:2002 edition);
- h) added another option for the final washing operation (see 7:6);
- i) Changed the description referring to ISO 4491 (see 7:8, 5:9 of the:2002 edition);
- j) Added the content that the powder should be homogenized before sampling and analysis (see 7:8):

This document is identical to ISO 13944:2012 "Determination of lubricant content in metal powders containing lubricants" Soxhlet (Soxhlet)

Extraction Law:

Two chapters "Normative References" and "Terms and Definitions" have been added to this document:

The following minimal editorial changes have been made to this document:

--- Change the standard name to "Soxhlet Extraction Method for Determination of Lubricant Content in Lubricated Metal Powders":

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

1 Scope

This document specifies a method for the determination of lubricant content in lubricant-containing metal powders: The method is also suitable for preparing samples for elemental determination

Contents, such as graphite and oxygen, the determination of which can be interfered with by the presence of lubricants:

The conditions for applying this method are that suitable solvents for the extraction of lubricants are known and readily available:

2 Normative references

There are no normative references in this document:

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document:

4 Principles

Extract the lubricant from the weighed sample with a suitable solvent, weigh the sample after extraction, calculate the mass percentage lost,

That is, the content of the extracted lubricant:

After extraction, the content of other components can be determined by conventional methods without the interference of lubricants:

5 Instruments and materials

5:1 Analytical balance, capable of weighing the sintered glass filter crucible containing the sample (see 5:2:3), accurate to 1 mg:

5:2 Soxhlet device, as shown in Figure 1: No grease should be applied to the grinding mouth, which consists of the following components:

5:2:1 Spherical condenser:

5:2:2 Soxhlet extractor, the volume is 150mL~200mL:

5:2:3 Sintered glass filter crucible [pore size classification P1601], filter paper (filtration speed 1000mL/min), glass wool and

Glass tube, 30mm in diameter, and the length meets the requirements in 7:3:

If the lubricant content of the sample to be tested is less than 0.5%, the above appliances should be rinsed with an organic solvent (see 5:3) before use:

5:2:4 A round-bottomed flask with a volume of 500mL, containing a boiling aid:

5:2:5 A heating mantle with sufficient power to evaporate the solvent at a rate of not less than 25mL/min:

1) See ISO 4793:1980 "Laboratory sintered (porous) filter pore size classification and grades":