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

GB/T 26704-2022

Replacing GB/T 26704-2011

Pencils

铅笔

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Foreword

This document is the official English translation of GB/T 26704-2022, issued by the State Administration for Market Regulation and the Standardization Administration on 12 October 2022 and in force since 1 May 2023. SAC/TC 378 is in charge of the English translation; in case of doubt about its contents, the Chinese original is authoritative.

The document was drafted according to the rules of GB/T 1.1-2020 and replaces GB/T 26704-2011 Pencils in whole. Besides structural and editorial changes, the technical deviations from the 2011 edition include: a changed scope; the deletion of the classification of coloured pencils by grade; tip load requirements added for the graphite lead tips of regular pencils across the whole range of grades; changed wear requirements for the graphite leads of 4B, 2B and 2H premium pencils; requirements and test methods added for the smoothness of graphite leads by Method B; changed performance requirements for coloured leads; requirements and test methods added for the light resistance of coloured leads; requirements added for broken leads in the barrels of 6B, 5B, 3B and B regular pencils; requirements and test methods added for phthalate esters; test conditions and materials added as a new Clause 6; changed test methods for tip load, wear, density, hardness and sliding of the lead; a changed sampling method for type inspection; and a changed marking method for the quality grade on consumer packaging.

The document was proposed by the China National Light Industry Council and prepared by SAC/TC 378, the National Technical Committee on Writing Instruments. Its lineage is long: the first edition was issued in 1959 as GB 149-1959 and revised in 1975, 1987 and 1995; it became the light industry standard QB/T 2774-2006 in 2006; the second edition was issued

in 2011 as GB/T 26704-2011; this is the first revision of that edition.

1 Scope

China's national standard for the ordinary wood-cased pencil, graphite and coloured. A pencil looks like a trivial object, but it is a laminated composite that has to survive sharpening, being dropped and being chewed, and almost everything a buyer complains about - a lead that snaps under the sharpener, one that scratches the paper, one that fades, a barrel that splits along the glue line - is a measurable property. This document turns those properties into a specification: it classifies pencils by lead material and, for graphite, into the seventeen hardness grades from 6B to 9H, then sets requirements for tip load, wear, smoothness, density and hardness of the lead, for the performance and light resistance of coloured leads, for broken leads inside the barrel, and for phthalate esters, with test conditions, test materials and test methods to match. It applies to graphite and coloured pencils with wood barrels, and excludes charcoal pencils and pencils for special purposes. Because pencils are a school article, it works alongside GB 21027 on the safety of students' articles, and its readers are the manufacturers, the buyers of large school and office contracts and the laboratories that check them.

This document specifies the classification, requirements, test conditions and materials, test methods, inspection rules and sign, packaging, transport and storage of pencils.

It applies to graphite and coloured pencils with wood barrels.

It does not apply to charcoal pencils or to pencils for special purposes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references only the edition cited applies; for undated references the latest edition applies, including any amendments.

The list covers packaging marking (GB/T 191), colour fastness (GB/T 250 and GB/T 8427), the paper properties used in the writing tests (GB/T 451.2, GB/T 451.3, GB/T 456, GB/T 1543, GB/T 7974 and GB/T 12654-2018), attribute sampling (GB/T 2828.1), the safety of students' articles (GB 21027) and the classification and diameters of black leads for wood-cased pencils (GB/T 39024-2020).

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 39024-2020 apply.

4 Classification

4.1 Pencils are divided into graphite pencils and coloured pencils according to their lead materials, and graphite pencils are further divided into regular pencils and premium pencils.

4.2 Graphite pencils are classified into seventeen types according to their hardness degree: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H.

4.3 Coloured pencils, including red and blue pencils, are classified according to colour consistency, as a single piece, or colour combination, as a complete set.

5 Requirements

The clause sets the performance of the graphite pencil lead in Table 1, which gives, for each hardness marker from 6B to 9H and separately for regular and premium pencils, the minimum tip load in newtons, the maximum wear in millimetres, the maximum smoothness expressed as a friction factor by Method A and Method B, the minimum density expressed as absorbance, and the hardness range in megapascals. The clause continues with the requirements for coloured leads and their light resistance, the appearance and dimensions of the pencil, broken leads in the barrel, and the limits on phthalate esters. The values themselves are not reproduced here.

10 Annex A (informative) The recommended barrel diameter

The annex gives the recommended nominal sizes of the barrel diameter in millimetres, in Table A.1, for round barrels, for hexagonal barrels measured on the inscribed circle and for triangular barrels measured on the height of the triangle.