

ICS 71.100.40

CCS Y 43



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

GB/T 43544-2023

**Oral care and cleaning products-Laboratory test method for
inhibition rate of toothpastes to dental calculus**

口腔清洁护理用品 牙膏对牙结石抑制率的实验室测试方法

Issued on: December 28, 2023

Implemented on: July 1, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

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

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Oral cleaning care product toothpaste inhibits dental calculus Laboratory test methods for rate

1 Scope

This document describes the principles, reagents and materials, instruments and equipment, and measurement steps of the laboratory test method for toothpaste's inhibition rate on dental calculus: calculate:

This document is applicable to the determination of the inhibition rate of toothpastes on dental calculus that uses inhibition of crystal growth as its mechanism of action:

2 Normative reference documents

GB/T 6682

GB 5009

3 Terms and definitions

There are no terms or definitions to be defined in this document:

4 Principles

When there is thick dental plaque, the calcium and phosphate in the saliva locally accumulate on it and gradually form (hydroxy) calcium phosphate minerals, which are dental plaque:

stone: Under constant pH conditions, using hydroxyapatite powder as a seed crystal, the calcium and phosphorus elements in artificial saliva react on the surface of the seed crystal Generate (hydroxy) calcium phosphate precipitates to simulate the plaque calcification process during the formation of dental calculus: By measuring calcium in artificial saliva concentration, and calculate the inhibition rate of the sample on dental calculus:

5 Reagents and materials

5:1 General requirements: Unless otherwise stated, the reagents used in this method are of analytical grade, and the test water is in accordance with the requirements specified in GB/T 6682: grade water:

5:2 Anhydrous calcium chloride (CaCl_2):

5:3 Sodium dihydrogen phosphate (NaH_2PO_4): 5:4 Sodium chloride (NaCl): 5:5 Sodium hydroxide (NaOH):

5:6 Sodium pyrophosphate ($\text{Na}_4\text{P}_2\text{O}_7$):

5:7 Hydroxyapatite [$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$]: purity $\geq 97\%$:

5:8 Sodium hydroxide solution (0.5mol/L): Weigh 0.08g (accurate to 0.01g) of sodium hydroxide (5:5), dissolve it in water and transfer to 10mL volumetric flask, dilute to volume and shake well: