

ICS 67.180.20
CCS X11



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

GB/T 12104-2022

Replacing GB/T 12104-2009

Terminology of starch and starch derivatives

淀粉及其衍生物术语

Issued on: October 14, 2022

Implemented on: May 1, 2023

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

Table of Contents

- 1 Scope
- 2 Normative references
- 3 General terms

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 for Standardization Documents" drafting. This document replaces GB/T 12104-2009 "Starch Terminology". Compared with GB/T 12104-2009, except for structural adjustments and editorial changes. In addition to the dynamics, the main technical changes are as follows:

a) Delete the main raw material terms, some processing and production terms and other product terms (see 3.1, 4.5~4.16, 2009 edition 4.22~

b) Deleted "pearl starch", "powdered starch", "bacterial enzyme", "fungal enzyme", "hydroxypropylated distarch phosphate", "acetylated adipate bis There are 13 terms including starch, chroma, color stability, alkali value, crude fiber, fine fiber, Brix, reducing power (see 2009 Versions 2.2, 2.3, 3.2.5, 3.2.6, 5.2.41, 5.2.42, 6.4, 6.5, 6.11, 6.13, 6.14, 6.16, and 6.17);

c) Added "connecting starch", "heat damaged starch", "homopolymer", "copolymer", "dextrin", "glucose", "maltose", "fructose", "glucose residue group", "reducing end", "non-reducing end", "average chain length", "outer chain", "inner chain", "main chain", "relative molecular weight", "ring structure" "Growth ring", "semi-crystalline", "A-type crystallization", "B-type crystallization", "C-type crystallization", "V-type crystallization", "degradation", "retrogradation", "freeze-thaw stability" Properties, "initial gelatinization temperature", "intermediate gelatinization temperature", "end point gelatinization temperature", "pasting temperature", "polarized cross", "Maltese cross" and "grain Heart", "Particle Size", "Viscosity", "Brabender Viscosity Curve", "Brabender Peak Viscosity", "RVA Viscosity Curve", "RVA Peak Viscosity Curve" Degree and other 39 terms (see 3.4, 3.6, 3.8, 3.9, 3.17~3.20, 3.22~3.35, 3.41, 3.43, 3.63, 3.68~3.73, 3.75, 3.77, 3.82, 3.84,

d) Changed "native starch", "free starch", "modified starch", "starch milk", "starch derivative", "starch granule", "starch paste", "starch gel Glue", "degree of substitution", "depolymerization", "hydrolysis", "gelatinization", "gelation", "denaturation", "saccharification", "whiteness", "spots", "solubility", "gelatinization temperature", "paste 26

terms including temperature range, fineness, electrical conductivity, viscosity, Brabender viscosity, RVA viscosity, and intrinsic viscosity Definition (see 3.2, 3.3, 3.7, 3.10, 3.13~3.16, 3.36, 3.41, 3.42, 3.44, 3.45, 3.47~3.49, 3.52, 3.66, 3.67, 3.74, 3.76, 3.78, 3.83,

3.86 and 3.88, 2.1.1, 4.2, 2.1.2, 4.1, 2.6~2.8, 6.25, 2009 version 4.18, 4.19, 2.11, 2.12, 4.17, 4.21, 6.3, 6.6, 6.9, 6.31~6.35, 6.35.4~6.35.6);

e) Five terms including "starch synthase", "glucose transsidase", "branching enzyme", "limit dextrinase" and "starch phosphorylase" have been added (see 4.5, 4.7, 4.15~4.17);

f) Changed "alpha-glucosidase", "malt amylase", "isoamylase", "pullulanase", "cyclodextrin glucosyltransferase", "grape Definitions of six terms such as "glycosyltransferase" (see 4.2, 4.6, 4.10~4.13, 3.2.2, 3.2.7, 3.2.11~ 3.2.14);

g) Added "Wheat A Starch", "Wheat B Starch", "Waxy Wheat Starch", "High Amylose Wheat Starch", "Barley Starch" and "Waxy Barley Starch" Starch, "Shuojiao Starch", "Banana Starch", "Duckweed Starch", "Chestnut Starch", "Quinoa Starch", "Jackfruit Starch", "Lotus Seed Starch", "Eagle Starch" Kidney bean starch, "lentil starch", "alpha-starch", "retrograded starch", "beta-starch", "acid-thinned starch", "primary ammonium cationic starch", "secondary ammonium Salt cationic starch", "tertiary ammonium salt cationic starch", "quaternary ammonium cationic starch", "acetylated starch", "sodium starch phosphate", "starch Monoester Phosphate" "Starch Sodium Octenylsuccinate" "Aluminum Starch Octenylsuccinate" "Starch Maleate" "Sodium Starch Carboxymethyl" "Hydroxymethyl Starch Methyl Starch" "Acetylated Distarch Phosphate" "Phosphorylated Distarch Phosphate" "Hydroxypropyl Distarch Phosphate" "Acetylated Distarch Phosphate" Powdered Adipate" "Acetylated Distarch Glycerol" "Phosphorylated Distarch Glycerol" "Hydroxypropyl Distarch Glycerol" "Oxidized Hydroxypropyl Glycerol" Base starch", "acetylated oxidized starch", "oxidized acetylated starch", "resistant starch", "slow digestible starch", "fast digestible starch" "I Type Resistant Starch", "Type II Resistant Starch", "Type III Resistant Starch", "Type IV Resistant Starch", "Type V Resistant Starch", "Resistant Dextrin" "Microsphere starch", "debranched starch", "branched starch", "moist heat treated starch", "starch syrup", "alpha-limit dextrin", "beta-limit dextrin" "alpha-cyclodextrin" "beta-cyclodextrin" "gamma-cyclodextrin" "macrocyclodextrin" "branched cyclodextrin" "glucose syrup" "malt syrup" "fructose Syrup", "oligosaccharides", "oligosaccharides", "isomaltose", "fructooligosaccharides", "gentiooligosaccharides", "panose", "isomaltose", "psicose" 77 terms including "sugar alcohol", "sorbitol [sugar] alcohol", "maltitol" and "complex sugar [alcohol]" (see 5.10~5.13, 5.18, 5.19, 5.39, 5.41~5.48, 5.53~5.55, 5.59~5.62, 5.68, 5.74, 5.77, 5.78, 5.81, 5.86, 5.90, 5.96, 5.97, 5.98, 5.99, 5.100~5.104, 5.107~5.114, 5.116~5.120, 5.122~5.124, 5.126~5.130, 5.132~5.145);

h) Change the term "distarch phosphate" to "distarch phosphate" (see 5.73, 5.2.20 of the 2009 edition);

i) Changed "sago starch", "roasted dextrin", "white dextrin", "yellow dextrin", "English gum",

"acid-modified starch", "soluble starch", "anion Starch", "Cationic Starch", "Oxidized Starch", "Dialdehyde Starch", "Crosslinked Starch", "Distarch Glycerol", "Acetate Starch", "Hexyl Dioxide Acid starch esters" "starch xanthate" "maleic acid starch esters" "carboxymethyl starch" "hydroxyalkyl starch" "hydroxypropyl starch" "hydroxyl Ethyl starch", "acrylamide starch", "cyanoethyl starch", "benzyl starch", "compound modified starch", "acetyl cyanoethyl starch", "B Acylated distarch phosphate" "Phosphorylated distarch phosphate" "Hydroxypropyl distarch phosphate" "Acetylated distarch adipate" "Acetylated Distarch Glycerol", "Phosphorylated Distarch Glycerol", "Hydroxypropyl Distarch Glycerol", "Porous Starch", "Resistant Starch" Definitions of 39 terms such as "fat substitute", "starch hydrolyzate", "cyclodextrin" and "maltodextrin" (see 5.39, 5.49~5.52, 5.55~5.58, 5.63~5.66, 5.68, 5.69, 5.80, 5.81, 5.85, 5.87~5.89, 5.91~5.102, 5.106, 5.107, 5.115, 5.121,

5.125 and 5.131, 5.1.31, 5.2.1~5.2.4, 5.2.6~5.2.13, 5.2.15, 5.2.16, 5.2.25, 5.2.26, 5.2.30~5.2.45, 5.2.47~5.2.49, 5.3.1~5.3.3). Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents. This document is proposed by the China Chamber of Commerce. This document is under the jurisdiction of the National Standardization Technical Committee on Edible Starch and Starch Derivatives (SAC/TC552). This document is drafted by: Jiangnan University, Zhejiang Wufangzhai Industrial Co., Ltd., South China University of Technology, Hangzhou Prostar Starch Co., Ltd., Qinghai Weston Potato Industry Group Co., Ltd., Jiangsu Yuechen Biotechnology Co., Ltd., and China Chamber of Commerce. The main drafters of this document. Gu Zhengbiao, Hong Yan, Chen Zhaogui, Chen Ling, Wang Xiaofen, Wu Juncai, Shi Jianzhong, Cheng Li, Li Zhaofeng, Li Caiming, Ban Xiaofeng and Li Xiangbo. The release status of previous versions of this document and the documents it replaces are as follows:

1 Scope

GB/T 12104-2022 is the Chinese national standard on terminology of starch and starch derivatives, in the field of food technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 14 October 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2023. Classification: ICS 67.180.20, CCS X11. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document defines common terms for starch and its derivatives. This document is applicable to the sales, scientific research and inspection of starch and its derivatives.

2 Normative references

This document has no normative references.

3 General terms

3.1 Starch A carbohydrate that exists in some plant organisms or microorganisms in the form of particles, and is alpha-D-glucopyranose through alpha-1,4- Polysaccharide molecules connected by glycosidic bonds and alpha-1,6-glycosidic bonds.

3.2 native starch Unmodified starch extracted from plants or microorganisms by physical or other means.

3.3 Free starch freestarch During the starch extraction process, the starch that can be separated and extracted from the free coexisting components.

3.4 Combined starch boundstarch linked starch Starch that cannot be separated from the raw material by mechanical means during the starch extraction process.

3.5 damaged starch damagedstarch Starch granules damaged by external force during processing.

3.6 thermaldamagedstarch Partially gelatinized starch granules are caused by the high temperature action of the raw materials for starch production in the drying process or starch production process.

3.7 Modified starch modifiedstarch modified starch After physical, chemical or biological treatment, new functional groups are introduced into the original starch molecules or the size of starch molecules and starch granules are changed. product of granular structure.