

ICS 67.060
CCS X 04



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

GB/T 46294-2025

**Inspection of grain and oils - Determination of animal
fragments in grain flour - Acid hydrolysis method**

粮油检验 粉类粮食动物源性杂质测定 酸水解法

Issued on: October 5, 2025

Implemented on: May 1, 2026

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

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 5.1 Reagents
- 5.2 Reagent Preparation

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. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the National Food and Strategic Reserves Administration. This document is under the jurisdiction of the National Technical Committee on Standardization of Grain and Oil (SAC/TC270). This document was drafted by: Henan University of Technology, Jiangsu University of Science and Technology, Zhengzhou Product Quality Inspection and Testing Center, and Henan Provincial Food and Salt Industry Association. Inspection and Testing Technology Research Institute (Henan Provincial Grain, Oil and Feed Product Quality Supervision and Inspection Center). The main drafters of this document are. Wang Zhengyan, Lu Yujie, Hu Tingting, Zheng Xueling, Gao Haijun, Zhang Hongyun, and Zhao Yaru. Grain and oil testing. animal-derived grains Acid hydrolysis method for impurity determination

1 Scope

GB/T 46294-2025 is the Chinese national standard covering finding insect and rodent fragments in flour - the acid hydrolysis that destroys the starch and leaves the chitin and hair intact, the flotation and filtration, and the microscopic counting, which is the standard way of judging how clean the grain was before milling. First edition, under the National Food and Strategic Reserves Administration. In force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026.

This document describes a test method for determining animal-derived impurities in floury grains using acid hydrolysis. This document applies to the determination of lipophilic animal-derived impurities such as insect fragments and rodent hair in wheat flour and rice flour. The determination of lipophilic animal-derived impurities in white powdery grains was

performed in accordance with the prescribed method.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 5491 Sampling and Divided Sampling Methods for the Inspection of Grains and Oils

GB/T 6682 Specifications and test methods for water used in analytical laboratories

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4.Principles Starch and protein are removed from floury grains by acid hydrolysis. Animal-derived impurities are extracted from the aqueous phase using the oil phase. The oil phase is then filtered. After collecting impurities with filter paper, observe and record them under a microscope.

5.Reagents and Materials Unless otherwise specified, all reagents used in this method are of analytical grade, and the water should meet the requirements of Grade III water as specified in GB/T 6682.

5.1 Reagents

5.1.1 n-Heptane (C_7H_{16}).

5.1.2 Liquid paraffin. relative density 0.83~0.89.

5.1.3 Hydrochloric acid (HCl).

5.1.4 Sodium dodecyl sulfate ($C_{12}H_{25}SO_4Na$).

5.1.5 Glycerol ($C_3H_8O_3$).

5.1.6 Anhydrous ethanol (C_2H_6O).

5.2 Reagent Preparation

5.2.1 Hydrochloric acid solution (5%). Take 5 mL of hydrochloric acid (5.1.3) and add water to make up to 100 mL.