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# GB

NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA

## GB 21710-2016

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### **National Food Safety Standard - Hygienic Practice for Eggs and Egg Products**

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## Foreword

This Standard replaces GB/T 21710-2008, *Hygienic Practice for Egg Products* [CAC/RCP 15-1976 (Amd. 1978, 1985), IDT].

Compared with GB/T 21710-2008, the major changes of this Standard are as follows:

- the standard name is changed into “*National Food Safety Standard – Hygienic Practice for Eggs and Egg Products*”;
- the relevant terms and definitions are modified;
- the requirements for site selection and factory environment are added;
- the requirements for the environmental sanitation of the manufacturing plant and the material requirements for the production, storage and collection of eggs in farm in the original standard;
- the food safety control requirements are detailed for the manufacturing process of egg products based on different types of egg products;
- the requirements for product recall management, training, management system and personnel, and record keeping and document management of products are added;
- Annex A is added, specifying the monitoring requirements for salmonellae during the manufacturing process of eggs and egg products.

# National Food Safety Standard - Hygienic Practice for Eggs and Egg Products

## 1 Application Scope

This Standard specifies the basic requirements and management guidelines for sites, facilities and personnel during material purchase, processing, packaging, storage and transportation and others in the production process of eggs and egg products.

This Standard applies to the production of eggs and egg products.

## 2 Terms and Definitions

For the purposes of this document, the terms and definitions defined in GB 14881-2013 apply.

## 3 Site Selection and Factory Environment

As specified in Article 3 of GB 14881-2013.

## 4 Plant and workshop

### 4.1 Design and layout

4.1.1 As specified in 4.1 of GB 14881-2013.

4.1.2 Processing premises shall be well designed and relevant facilities and equipment used for production shall be built and planned to preclude the breeding and contamination of microorganisms, especially the contamination of Salmonellae, and areas where eggs and other materials are received or stored shall be separated from areas in which final product preparation or packaging is conducted; areas used for storage, manufacture or handling of edible products should be separate and distinct from those used for inedible materials; areas for breaking, pasteurizing and filling shall be so separated as to protect against cross-contamination.

4.1.3 The construction and layout of the processing premises shall be such as to secure a regulated flow in the manufacturing process of eggs and egg products and shall provide for correct temperature/humidity conditions at all stages of the process; manufacture and processing shall not be conducted in the outdoor environment.

4.1.4 The cleanliness of work zones shall be graded in accordance with the

#### **5.1.4 Wastes storage facilities**

As specified in 5.1.4 of GB 14881-2013.

#### **5.1.5 Personal hygienic facilities**

As specified in 5.1.5 of GB 14881-2013.

#### **5.1.6 Ventilation facilities**

As specified in 5.1.6 of GB 14881-2013.

#### **5.1.7 Lighting facilities**

As specified in 5.1.7 of GB 14881-2013.

#### **5.1.8 Storage facilities**

As specified in 5.1.8 of GB 14881-2013.

#### **5.1.9 Temperature control facilities**

As specified in 5.1.9 of GB 14881-2013.

### **5.2 Equipment**

#### **5.2.1 Production equipment**

##### **5.2.1.1 General requirements**

As specified in 5.2.1.1 of GB 14881-2013.

##### **5.2.1.2 Materials**

As specified in 5.2.1.2 of GB 14881-2013.

##### **5.2.1.3 Design**

**5.2.1.3.1** As specified in 5.2.1.3 of GB 14881-2013.

**5.2.1.3.2** Equipment and utensils shall be so designed and constructed as will prevent hygienic and contamination hazards and permit easy and thorough cleaning.

**5.2.1.3.3** Machines and containers for the liquid egg shall be so constructed as to permit the ready elimination from the liquid egg supply of all the egg contents that are unfit for further processing, including shell.

#### **5.2.2 Monitoring equipment**

As specified in 5.2.2 of GB 14881-2013.

waste material shall be cleaned, as also shall the paved areas used for the storage of such waste receptacles, at least once a day.

## **6.6 Work clothes management**

As specified in 6.6 of GB 14881-2013.

# **7 Food Materials, Food Additives and Food Related Products**

## **7.1 General requirements**

As specified in 7.1 of GB 14881-2013.

## **7.2 Food materials and packaging materials**

### **7.2.1 Requirements for purchase and acceptance**

**7.2.1.1** The purchase and acceptance of food materials and packaging materials shall be as specified in Article 7 of GB 14881-2013.

**7.2.1.2** The enterprise shall establish a supplier management system, which specifies the procedures for selection, auditing and evaluation of suppliers.

**7.2.1.3** Evaluate the processes and safety measures of the suppliers; conduct on-site assessment or monitor processes for suppliers when necessary; and meanwhile, ensure raw materials come from non-epidemic areas.

**7.2.1.4** The enterprise shall examine the product conformity certification documents; raw materials and packaging materials may only be used after they pass the acceptance.

**7.2.1.5** When agricultural products in bulk are accepted, record at least the names, quantities, supplier contact information, dates of arrival, testing indexes and other information of agricultural products.

**7.2.1.6** Ensure the raw materials purchased comply with relevant national laws, regulations and standards; and conduct testing regularly, at least once a year.

**7.2.1.7** The manufacturing enterprise shall exercise strict control over the proportion of broken eggs during the transportation process, conduct inspection in accordance with the acceptance requirements of it and reject or handle independently after isolating unqualified materials.

### **7.2.2 Requirements for transportation and storage**

**7.2.2.1** Tools and vessels for transporting raw materials and packaging materials

#### **8.6.6.2** Inspection

Make control measures to ensure each egg passes inspection, monitor undesirable objects, blood streak and so on, and pick out unqualified eggs.

#### **8.6.7** Key factor control for the manufacturing process of liquid egg products

##### **8.6.7.1** Breaking

Each egg shall be broken either by hand or machine; and breaking by crushing is not preferable, in order to prevent against microbial contamination and extraneous contamination.

##### **8.6.7.2** Straining and collection

The liquid egg shall be strained either by suitable strainers, centrifuges or other suitable equipment. Select the appropriate mesh number, make control measures to ensure the intactness and cleanliness of strainers, examine and clean strainers at least once each shift and replace strainers if necessary. Conduct cleaning strictly following relevant requirements, verify effects after cleaning and ensure the subsequent products will not be contaminated.

##### **8.6.7.3** Temporary storage

The temperature for the temporary storage of liquid egg shall not be higher than 7°C and conduct next treatment within 24 h to ensure microorganisms will not breed.

#### **8.6.8** Key factor control for the manufacturing process of dried egg products

##### **8.6.8.1** Powder spraying

Ensure the water content in egg powder is within an appropriate range, control the temperature at air inlets and outlets, test the water content of each batch of egg powder and handle unqualified products properly.

##### **8.6.8.2** Egg powder hot room treatment

Monitor the temperature of the heat treatment room and egg powder centre, calibrate thermometers regularly with the frequency of calibration at least once a year.

#### **8.6.9** Key factor control for the manufacturing process of reformed eggs

##### **8.6.9.1** Proportioning

Use calibrated balance to weigh all kinds of food ingredients and designate special personnel to review; and meanwhile, monitor the use level of food additives in proportioning, and strictly follow the provisions of GB 2760 to ensure it is within the appropriate range.

##### **8.6.9.2** Material liquid management

## Annex A

### Microbiological Monitoring Procedure Guide for the Manufacturing Process of Eggs and Egg Products

#### A.1 Monitoring purpose

Salmonellae not only causes harm to livestock and poultry, but also infects human beings to cause illness through livestock and poultry. As an important carrier of salmonellae, eggs and egg products play an important role in the food safety incidents caused by salmonellae, so salmonellae shall be monitored during the manufacturing process of eggs and egg products to verify whether the sanitary control procedures are effective; in case of any deviation, the enterprise shall take corrective measures. Obtain the basic data of sanitary conditions through constant monitoring and track the changes of tendencies.

In order to avoid contamination incidents, the requirements for salmonellae in the manufacturing process of eggs and egg products shall be made. The monitoring requirements may be used as a tool for food safety management to conduct evaluation for the sanitary conditions of clean work zones as well as the basic procedure of Hazard Analysis and Critical Control Point (HACCP).

Consideration shall be given to the factors, including the ecological characteristics of salmonellae, when the monitoring plans are made. Salmonellae are seldom found in the dry environment, but monitoring plans shall also be made to prevent against the entry of salmonellae, evaluate the effectiveness of sanitary control measures for the manufacturing process and guide personnel concerned to prevent further diffusion in case salmonellae are detected.

#### A.2 Factors for designing sampling plans

##### A.2.1 Product type and technological process

Decide the requirements and ranges of sampling plans in accordance with the characteristics of products. Salmonellae are specified to be a pathogenic microorganism for all eggs and egg products in this Standard.

The emphases of monitoring shall be on the areas where microorganisms tend to hide and breed; special attention shall be paid to the areas close to material eggs where contamination is liable to occur; priority is given to the monitoring of known or possible existent contaminated areas.

##### A.2.2 Specimen types

The monitoring requirements include two types of specimens:

- a) those sampled from material egg yolk or mixed egg liquid;