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

SN/T 0400.13-2014

**Rules for inspection of canned food for import and export. Part
13: Heat penetration testing**

进出口罐头食品检验规程 第13部分：热渗透测试
(English Translation)

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Foreword

SN/T 0400 "Import and Export Canned Food Inspection Regulations" is divided into 13 parts.

- Part 1. General;
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- Part 3. Processing hygiene;
- Part 4. Containers;
- Part 5. Filling;
- Part 6. Thermal sterilization;
- Part 7. Finished product;
- Part 8. Packaging;
- Part 9. Labels;
- Part 10. retort pouch food;
- Part 11. Glass containers;
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- Part 13. Thermal penetration test.

This part is the 13th part of SN/T 0400.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

Some of the contents of this document may involve patents. The issuing organization of this document is not responsible for identifying these patents.

This part is proposed and managed by the National Certification and Accreditation Administration.

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Introduction

When the can container is heated, heat is transferred from the outside of the can through the wall of the can to the can, and the temperature inside the can continues to rise. In order to determine the temperature change in the tank the situation requires a thermal penetration test to sterilize the food in the can to provide an objective scientific basis for future sterilization calculations. Thermal penetration measurement the test includes determining the location of the cold spot in the tank, determining the temperature change of the cold spot in the tank, determining the heat transfer parameters, and performing the sterilization process or the sterilization procedure.

Calculation.

The thermal penetration test provides a scientific basis for the formulation of canned sterilization regulations, and can handle canned foods to domestic and foreign food safety control authorities.

The sterilization record laid the technical foundation.

Import and export canned food inspection procedures Part 13. Thermal penetration testing

1 Scope

This part of SN/T 0400 specifies the technical requirements for the thermal penetration test of canned foods for import and export.

This section applies to the test of heat penetration of canned foods and the examination of heat penetration test results.

2 Terms and definitions

The following terms and definitions apply to this document.

Critical factor

The changes affect the operation of the intended sterilization protocol and any traits, characteristics, aspects, and other parameters of the commercial sterility of the product. Does not include single Purely for controlling product form, quality and factors unrelated to food safety.

Filling volume filweight the weight of the canned solid before sterilization.

Net weight the weight of all products in the container, including soup or salt water, but does not include the weight of the container.

Solid weight drainedweight the weight of solids in the tank after sterilization.

D value Dvalue

The lethal rate of a microorganism at a given temperature (also known as the "lethal rate constant" or "reduced to 1/10 of the time required"), that is, at a certain constant the number of minutes (min) required to kill 90% of the microorganisms is killed at a fixed temperature.

Z value Zvalue

The slope value of the thermal lethal time curve, that is, the Z value represents the number of temperatures (°F or °C) required for the curve to span one log cycle, which is the value of D.

A measure of the change in temperature. The Z value is expressed as the number of temperatures required to cause a 10-fold change in the D value.

F value Fvalue, sterilizingvalue the number of minutes (min) required to kill a given number of microorganisms at a given temperature is called the F value. Usually the value of F is written at the F value.

The right side is suffixed with a Z value, and the suffix is a reference temperature (TRef.). For low acid foods, the Z value is set to 10, TRef. = 121.1 ° C;

Different reference temperatures and Z values can be used for acidic or acidified foods, such as. Z value is set to 8.9, TRef. = 83.3 °C.

Fo value Fovalue

At TRef.=121.1 ° C, Z=10, the number of minutes (min) required to kill a specific number of spores, referred to as the Fo value. As considered