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**Traditional Chinese medicine —  
Coding system for Chinese  
medicines —**

**Part 1:  
Coding rules for Chinese medicines**

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*Médecine traditionnelle chinoise — Système de codage des médecines  
chinoises —  
Partie 1: Règles de codage des médecines chinoises*

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ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 249, *Traditional Chinese medicine*.

ISO 18668 consists of the following parts, under the general title *Traditional Chinese medicine — Coding system for Chinese medicines*:

- Part 1: *Coding rules for Chinese medicines*
- Part 2: *Codes for decoction pieces*
- Part 3: *Codes for Chinese materia medica*
- Part 4: *Codes for granule forms of individual medicinals for prescriptions*

## Introduction

As the pharmaceutical materials extracted from natural and botanical products have become increasingly attractive, significant progress has been achieved in identifying new sources of natural products for traditional and alternative medicine. In particular, Chinese traditional medicine has been the focus of tremendous research, development and applications worldwide. Accordingly, Chinese medicinal materials are increasingly being used in countries around the world. Currently, there are more than 70 countries that have established administrative systems to regulate Chinese Medicine. At present, the annual sale of Chinese medicines has reached more than USD 16 billion and is increasing at a rate of 10 % to 20 % per year with great future potential. At the same time, concerns of harm to the body associated with the long-term use of synthetic drugs have been recognized. Therefore, many countries are developing vigorous controls and regulations on using antibiotics and other synthetic drugs, while recognizing the importance of traditional and alternative medicines. Thus, this brings more opportunities for the development of the market of Chinese medicines.

Today, bar codes are widely used for managing almost all ordinary products that are put up for sale, for example, an eraser or a pencil has its individually identifiable bar code. Yet so far, a bar coding system for products used in Chinese medicine has not been given sufficient attention, making it difficult to categorize the individual items for international trade and research development. This brings challenges and concerns in government supervision and proper use by patients. As products for medicinal use, Chinese medicines could have bar codes that can be integrated into the current bar code system that is used for other commercial products. In this way, bar codes can be used to track sources and monitor the quality of the products. Therefore, there is an urgent need to develop a bar code system for Chinese medicine products that will enable to identify each specific Chinese medicine product.

The Coding System of Chinese Medicines is developed based on science and research rooted in plant taxonomy, Chinese medicine, Chinese medicinal processing, and other established regulatory handbooks and guidelines of GS1 General standard, central product classification (CPC) and ISO/IEC 15420, etc. The codes help to translate complicated names of a wide variety of decoction pieces, Chinese Materia Medica (raw materials), and granule forms of individual medicinals for prescriptions into transparent digits. In this way, each Chinese medicine corresponds to a unique code as its identification.

The Coding System of Chinese Medicines aims to promote standardization and digitalization for Chinese medicine, to ensure authenticity, equality, fairness and transparency in international markets and trade and to facilitate government supervision and regulation of Chinese medicine. It is hoped that it will help pharmaceutical enterprises to manage workflow and increase economic returns. It will help healthcare delivery organizations, such as hospitals and dispensaries, to improve information management systems that can ensure the accuracy of dispensing, ensuring the safe and effective use of prescribed medicine.

As it has been previously acknowledged, Chinese decoction pieces are processed products of Chinese Materia Medica, which are also known as raw materials. Thus when designing the coding system for Chinese medicines, it is feasible that one set of rules could incorporate all the features of each category of Chinese medicines, as they share the same medicinal source and medical part. To be specific, their divergence and commodity attributes can be clearly described in one of the layers (layer 8) in this set of coding rules. Granule forms of individual medicinals for prescriptions are innovative products made from decoction pieces. Based on the same considerations of feasibility and cost-control, the granular forms can be included within the same set of rules for decoction pieces.

However, although Chinese patent medicines (CPM) are made from decoction pieces, their coding rules are more complicated and differ from decoction pieces. Therefore, this coding system is not fit for CPM, and coding rules for CPM need to be formulated separately.

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# Traditional Chinese medicine — Coding system for Chinese medicines —

## Part 1: Coding rules for Chinese medicines

### 1 Scope

This part of ISO 18668-1 specifies rules to encode Chinese medicines, including decoction pieces, Chinese Materia Medica (raw materials) and granule forms of individual medicinals for prescriptions (GFIMP), but not Chinese patent medicines (CPM).

Relevant coding standards for Kampo medicine, Korean medicine and other traditional medicines will be separately formulated as needed by experts in these areas.

This part of ISO 18668-1 is suitable for decoction pieces, Chinese Materia Medica (raw materials), and granule forms of individual medicinals for prescriptions (GFIMP) in the fields of clinical medication, scientific research and teaching, and statistics and management.

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### 2 Normative references (standards.iteh.ai)

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15420, *Information technology — Automatic identification and data capture techniques — EAN/UPC bar code symbology specification*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### Chinese medicine

substance or combination of substances used under the guidance of traditional Chinese medicine (TCM) theory for medical care and the prevention and treatment of disease

Note 1 to entry: This includes Chinese Materia Medica, decoction pieces, granule forms of individual medicinals for prescriptions (GFIMP), and Chinese patent medicines (CPM).

#### 3.2

##### Chinese Materia Medica

##### CMM

medicinal parts of medicinal plants, animals, and minerals after preliminary processing, which are used as raw materials in Chinese medicines

Note 1 to entry: This refers to the raw materials used to make decoction pieces.

**3.3  
decoction piece**

prescription medicinal processed from Chinese Materia Medica under the guidance of TCM and processing methods for Chinese medicines

Note 1 to entry: Decoction pieces are directly used in clinical practice or the production of prepared medicines.

**3.4  
granule form of individual medicinal for prescriptions  
GFIMP**

granular preparation processed from single decoction piece after extraction, concentration, and drying

Note 1 to entry: This refers to a preparation of decoction pieces that can be directly dispensed without decocting.

**3.5  
layer**

set of the characters within the code

EXAMPLE A sub-field within the code.

## 4 Coding principles

### 4.1 Uniqueness

Each variety and processed form corresponds to a unique code.

### 4.2 Scientific integrity

The most stable properties, attributes, or characteristics of each Chinese medicine are selected as basis for classification and coding. The basic attributes, the main applications, as well as its quality, of each Chinese medicine are reflected in the codes.

### 4.3 Scalability

The coding rules allow sufficient space for expansion.

### 4.4 Compatibility

The coding rules are consistent with relevant existing International Standards.

### 4.5 Stability

The code for each Chinese medicine remains unchanged once assigned, as long as the basic characteristic of the medicinal does not change. Even if some Chinese medicines are discontinued for production and use, their codes should still be kept.

## 5 Coding technology

### 5.1 Technical basis

#### 5.1.1 Layer 1

Layer 1 with 1 digit, Chinese medicines, with the categories of agriculture, forestry, animal husbandry, and fishery are symbolized by 0, which is developed according to central product classification (CPC) developed by United Nations Statistical Commission.



### 5.1.2 Layer 2

Layer 2 with 1 digit, the product code of Chinese medicines, symbolized by 6, is developed according to the request of CPC and GB/T 7635.1-2002. It is used to express the natural and commodity properties of Chinese medicines, which is important for identification and trade.

### 5.1.3 Layer 3

Layer 3 with 1 digit, the main code of medicinal source, is encoded according to classification and codes of plants, which is based on Linnaean taxonomy categories with the modern Five Kingdoms classification. In layer 3, 1 refers to plant, 2 refers to animal, 3 refers to mineral, 4 refers to fungus, 5 refers to lichen, 6 refers to algae, and 7 refers to mixed kingdom.

### 5.1.4 Layer 4

Layer 4 with 3 digits ('001' to '999'), the subdivided code of medicinal source, indicates sources (family or group) and serial numbers of Chinese medicines.

**5.1.4.1** In the plant category, different families of plants are encoded according to a certain classification rule from lower plants to higher plants. In layer 4, for the first digit, 1 refers to liverwort, 2 refers to moss, 3 refers to pteridophytes, 4 refers to gymnosperm, 5 and 6 refers to Archichlamydeae of dicotyledoneae, 7 refers to Sympetalae of dicotyledoneae, and 9 refers to monocotyledon. 0 and 8 are designed for future extension as needed.

**5.1.4.2** In the animal category, different families of animals are encoded according to a certain classification rule from lower animals to higher animals, followed by Porifera, Coelenterata, Annulata, Mollusca, Arthropoda, Ectoprocta and Phylum Chordata.

**5.1.4.3** In the mineral category, groups of minerals are encoded according to a certain classification rule from simple minerals to complex minerals, followed by Elemental mineral, Sulfides and Related Analogues, Oxides and hydroxides, Oxysalt, Halide, Magmatic rocks, Metamorphic rocks, and Fossils.

### 5.1.5 Layer 5

Layer 5 with 1 digit, the main code of medicinal part, ranged from 1 to 9, in which different numbers stand for different kinds of medicinal parts.

**5.1.5.1** In the plant category, medicinal parts are divided into roots and bulbs, stems, woods, cortex and leaves, flowers, fruits and seeds, whole plants, and other products, symbolized by 1, 2, 3, 4, 5, and 9 respectively.

**5.1.5.2** In the animal category, medicinal parts are divided into 4 subdivisions. One indicates the whole animal and eviscerated animal, 2 indicates animal skin, horn, scale, conch, 3 indicates animal skeleton and visceral organ, 4 indicates animal product and processed goods.

**5.1.5.3** In the fungus category, medicinal parts are divided into mycelium, sporocarp, and other products, which are symbolized by 1, 2, and 9 respectively.

### 5.1.6 Layer 6

Layer 6 with 2 digits, the subdivided code of medicinal part, ranged from 01 to 99, is the second order division. For instance, as a type of medicinal plant part, rhizomes and roots can be divided into 7 subdivisions such as root, fibrous root, and so on; while flowers can be divided into 6 subdivisions as inflorescence, simple flower, flower bud, receptacle, stamen, and pistil.

## 5.1.7 Layer 7

Layer 7 with 3 digits, the varieties code of Chinese medicines ranged from 001 to 999 is the sequence number of the medicinal located in the code table for Chinese medicines from the same medicinal part of the same family.

**EXAMPLE** Both Decoction pieces of *Arisaematis Rhizoma* (code: 06191610600100005) and *Pinellia Tuber* (code: 06191610600200002) are derived from Tuber of Araceae. Their codes are same from layer 1 to 6, i.e. 061916106, but codes of layer 7 are different, i.e. *Arisaematis Rhizoma* encoding as 001, referring as the No.001 decoction pieces derived from Tuber of Araceae, *Pinellia Tuber* encoding as 002, referring as the No. 002 decoction pieces derived from Tuber of Araceae.

## 5.1.8 Layer 8

Layer 8 with 2 digits, ranged from 00 to 99, is used to indicate specifications of Chinese medicines. 00 indicates purifying, 01 indicates extremely thin pieces (thinner than 0,5 mm), 02 indicates thin pieces (1 mm to 2 mm), 03 indicates thick pieces (2 mm to 4 mm) or pieces, 04 indicates segments, 05 indicates blocks, 06 indicates shreds, 07 indicates powder, 08 indicates fresh medicinal, 09 indicates granule forms of individual medicinals for prescriptions, 99 indicates Chinese Materia Medica. If there are more than one kind of cutting specifications of the same Chinese medicine, the commonly used one is selected in order to reach unification. For example, Rhubarb can be specified both as piece and block, among which block is selected to stand for the specification code.

## 5.1.9 Layer 9

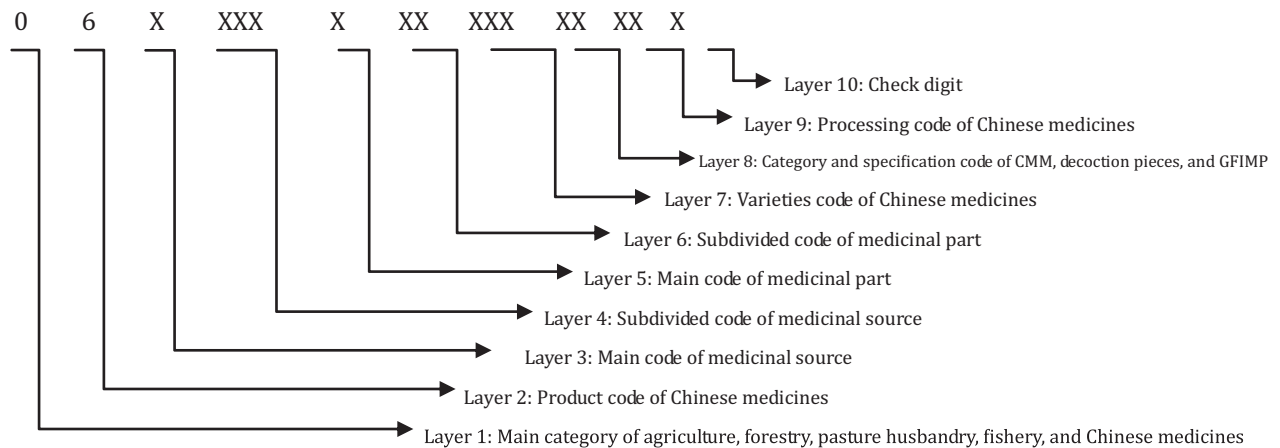
Layer 9 with 2 digits, ranged from 00 to 99, is used to indicate the processing methods of Chinese medicines. The first and second digits indicate processing methods and requirements respectively. For example, 1 as the first digit indicates plain stir-frying, while 11 and 12 indicate stir-frying until yellowish and stir-frying until brown. The number 2 as the first digit indicates stir-frying with a solid adjuvant, while 21 indicates stir-frying with bran, 22 with sand, 23 with talcum powder, 24 with clamshell powder, 25 with rice, 26 with soil, 27 with cattail pollen. The number 3 as the first digit indicates stir-frying with a liquid adjuvant, while 31 indicates stir-frying with wine, 32 with vinegar. The number 4 as the first digit indicates processing to scorch, while 41 indicates stir-frying to scorch, 42 indicates calcining to scorch. 99 indicates other processing methods.

## 5.1.10 Layer 10

Layer 10, is the check digit with one number, which refers to the last number calculated by a certain kind of operation method to test the accuracy of the 16 numbers former. Check digit is calculated by the method in ISO/IEC 15420.

## 5.2 Structure

Coding rules are represented by 10 layers with 17 digit Arabic numerals in order, as shown in [Figure 1](#).



**Figure 1 — Coding structure of Chinese medicines**

### 5.3 Detailed description

Since Chinese Materia Medica is the raw material of decoction pieces, and decoction pieces are the basic materials of granule forms of individual medicinals for prescriptions, when designing the coding system for Chinese medicines, it is feasible that one set of rules could incorporate the features of both decoction pieces and Chinese Materia Medica, since they share the same medicinal source and medicinal part. So in the structure, layer 1 to layer 7 is the same for all three forms.

After being processed, decoction pieces and granule forms of individual medicinals for prescriptions are different from Chinese Materia Medica (raw materials). Thus, there are some differences in structure of the rules. Layer 8 (with 2 digits) encodes specification of medicinals. In this layer, 09 is used to express granule forms of individual medicinals for prescriptions and 99 is used to express Chinese Materia Medica. Layer 9 (with 2 digits) encodes processing codes of medicinals. Decoction pieces and granule forms of individual medicinals for prescriptions have their corresponding processing methods in layer 9.

Detailed description of coding structure of Chinese medicines are shown as follows:

**Table 1 — Detailed description of coding structure of Chinese medicines**

Layer No.	Classification	Digit No.	Code value	Note
Layer 1	Main category of agriculture, forestry, pasture husbandry, fishery, and Chinese medicines	1 digit	Chinese medicines are symbolized by 0.	See <a href="#">5.1.1</a>
Layer 2	Product code of Chinese medicines	1 digit	The product code of Chinese medicines is symbolized by 6.	See <a href="#">5.1.2</a>
Layer 3	Main code of medicinal source	1 digit	For the main code of medicinal source, 1 refers to plant, 2 refers to animal, 3 refers to mineral, 4 refers to fungus, 5 refers to lichen, 6 refers to algae, 7 refers to mixed kingdom.	See <a href="#">5.1.3</a>
Layer 4	Subdivided code of medicinal source	3 digits	The subdivided code of medicinal source (family, group) ranged from 001 to 999.	See <a href="#">5.1.4</a> and <a href="#">Annex A</a>
Layer 5	Main code of medicinal part	1 digit	The main code of medicinal part ranges from 1 to 9.	See <a href="#">5.1.5</a> and <a href="#">Annex A</a>
Layer 6	Subdivided code of medicinal part	2 digits	The subdivided code of medicinal part, ranged from 01 to 99, is the second order division.	See <a href="#">5.1.6</a> and <a href="#">Annex A</a>
Layer 7	Varieties code of Chinese medicines	3 digits	The varieties code, symbolized by 3 digits, is the sequence number of the medicinal located in the code table, ranged from 001 to 999.	See <a href="#">5.1.7</a>
Layer 8	Category and specification code of CMM, decoction pieces, and GFIMP	2 digits	The specification code of Chinese medicines, ranged from 00 to 99, is categorized by the cutting type or appearance.	See <a href="#">5.1.8</a> and <a href="#">Annex A</a>
Layer 9	Processing code of Chinese medicines	2 digits	The processing code of Chinese medicines, ranged from 00 to 99, is categorized according to processing methods and varieties.	See <a href="#">5.1.9</a> and <a href="#">Annex A</a>
Layer 10	Check digit	1 digit	Check digit ranges from 1 to 9.	See <a href="#">5.1.10</a> and <a href="#">Annex B</a>