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Replacing GB/T 15037-1994

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**Wines**

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## Foreword

**With the exceptions of Chapter 3, Subsections 5.2, 5.3 and 5.4 of Chapter 5, and Subsections 8.1 and 8.2 of Chapter 8 of this Standard which are mandatory clauses, all other clauses are recommendatory.**

In the event of any discrepancy in terms of definitions in this Standard, the Organisation Internationale de la Vigne et du Vin (OIV) Rules formulated by OIV shall be used.

This Standard is a revision of GB/T 15037 – 1994 Wines.

This Standard replaces GB/T 15037 – 1994.

Compared with the original Standard GB/T 15037 – 1994, the major changes in this Standard are as follows:

1. The descriptions in the definitions have been appropriately revised according to the “OIV Rules” and the “Grape Fermentation Technical Rules of China”. Definitions for special wines have been added – liqueur wines, ice wines, noble rot wines, flor or film wines, low-alcohol wines, non-alcoholic wines and *V. amurensis* wines.
2. For product classification, in addition to the classification based on the colours and carbon dioxide content indicated in the original Standard, sugar content is another category for classification.
3. Requirements
  - The free sulphur dioxide standard has been discarded and the total sulphur dioxide limit standard has been retained.
  - No limit is set for total acids, which are expressed using the actual test value, in the same way as in judging the type of wines.
  - Safety standards for citric acid, copper, methyl alcohol and preservatives have been added. Using these, Benzoic acid can be naturally produced in the fermentation process, instead of being artificially added. Thus, the standard is  $\leq 50\text{mg/l}$ .
  - “Synthetic colouring agents,” “sweetening agents,” “flavouring essences” and “thickening agents” are banned.
4. A new quantity requirement has been added.
5. In the inspection rules, the sampling table and its related clauses have

been revised.

6. For the sake of convenience when using descriptions for the classification and evaluation of sensory requirements, Appendix A in particular has been added.

Appendix A of this Standard is a normative appendix.

This Standard was proposed by the China National Light Industry Council.

This Standard is kept by the Wine-Making Sub-Committee, National Food Industry Standardisation Technical Committee.

The drafting units of the Standard: China National Academy of Food & Fermentation Industries, Yantai Changyu Pioneer Wine Company Limited, China Great Wall Wine Company Limited, Sino-French Joint-Venture Dynasty Winery Limited, National Wine Quality Supervision and Inspection Centre, Suntime International Winery Company Limited, and the Wine Branch of Gansu Mogao Industrial Development Company Limited.

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# Wines

## 1 Scope

The Standard specifies the terms and definitions, product classification, requirements, analytical methods, inspection rules, and labelling, packaging, transportation and storage necessities for wines.

The Standard is applicable to wines made using fresh grapes or grape juice as the raw materials and which have undergone the process of fermentation.

## 2 Normative references

The clauses contained in the following reference documents, which are cited in this Standard, shall become the clauses of this Standard. For all dated reference documents, all their subsequent amendments (exclusive of corrected contents) or revised versions shall not apply to the Standard. However, any parties that come to an agreement in accordance with this Standard shall be encouraged to consider adopting the latest version of the following normative reference documents. Where the reference documents are not dated, their latest versions are applicable to this Standard.

GB/T 191	Labelling of Packaging and Storage Charts
GB 2758	Hygienic Standard for Fermented Wines
GB/T 4789.25	Microbiological Examination of Food Hygiene - Inspection of Alcoholic Liquors
GB/T 5009.12	Determination of Lead in Foodstuffs
GB/T 5009.29	Determination of Sorbic Acid and Benzoic Acid in Foodstuffs
GB 10344	General Rules for Labelling of Pre-packaged Beverages
GB/T 15038	Analytical Methods for Wines and Fruit Wines
JJF 1070	Rules of Metrological Inspection for Net Content of Pre-packaged Commodities with Fixed Content
	Measurement, Supervision and Management Methods for Pre-packaged Commodities with Fixed Content

## 3 Terms and Definitions

The following terms and definitions are applicable to this Standard.

### 3.1 Wines

Fermented liquor made by full or partial fermentation using fresh grapes or grape juice as the raw materials, and with a certain level of alcohol content.

### 3.1.1 Dry wines

Wines with a sugar content (measured by grape glucose) less than or equal to 4.0g/l; or wines with a maximum sugar content of 9.0g/l when the difference between total sugar and total acids (measured by tartaric acids) is less than or equal to 2.0g/l.

### 3.1.2 Semi-dry wines

Wines with a sugar content greater than that of dry wines or with a maximum sugar content of 12.0g/l; or wines with a maximum sugar content of 18.0g/l when the difference between total sugar and total acids (measured by tartaric acids) is less than or equal to 2.0g/l.

### 3.1.3 Semi-sweet wines

Wines with a sugar content greater than that of dry wines or with a maximum sugar content of 45.0g/l.

### 3.1.4 Sweet wines

Wines with a sugar content greater than 45.0g/l.

### 3.1.5 Still wines

Wines with carbon dioxide pressure of less than 0.05 MPa at 20°C.

### 3.1.6 Aerated wines

Wines with carbon dioxide pressure greater than or equal to 0.05 MPa at 20°C.

#### 3.1.6.1 Sparkling wines

Aerated wines with carbon dioxide (completely produced by natural fermentation) pressure greater than 0.35 MPa at 20°C (for bottles with a capacity of less than 250 ml and with carbon dioxide pressure greater than or equal to 0.3 MPa).

— Brut sparkling wines: sparkling wines with a sugar content of less than or equal to 12.0g/l (tolerable deviation: 3.0g/l).

— Extra-dry sparkling wines: sparkling wines with a sugar content within the range of 12.1-17.0g/l (tolerable deviation: 3.0g/l).

— Dry sparkling wines: sparkling wines with a sugar content within the range of 17.1-32.0g/l (tolerable deviation: 3.0g/l).

— Semi-dry sparkling wines: sparkling wines with a sugar content within the range of 32.1-50.0g/l.

— Sweet sparkling wines: sparkling wines with a sugar content greater than 50.0g/l.

#### 3.1.6.2 Semi-sparkling wines

Aerated wines with carbon dioxide (completely caused by natural fermentation) pressure within the range of 0.05-0.34 MPa at 20°C.

### 3.2 Special wines

Wines that are made from fresh grapes or grape juice, using special picking or wine-making techniques.

#### 3.2.1 Liqueur wines

Wines made from grapes, with a total alcohol content of above 12% (volume fraction), with the addition of grape brandy, edible alcohol or wine essence, grape juice, grape juice concentrate, caramel grape juice, white sugar, etc, so that the final product has an alcohol content of 15.0-22.0% (volume fraction).

#### 3.2.2 Carbonated wines

Wines whose carbon dioxide is partially or completely added artificially, and which have similar physical properties to those of aerated wines.

#### 3.2.3 Ice wines

Wines made from frozen grapes which are kept hanging on the branches at below  $-7^{\circ}\text{C}$  for a certain period of time, and then picked for pressing and fermentation (no sugar source may be added in the wine-making process).

#### 3.2.4 Noble rot wines

Wines made from grapes which are infected with *Botrytis cinerea* Pers. in the later stages of the ripening period, as a result of which obvious changes have occurred to the ingredients of the fruits.

#### 3.2.5 Flor or film wines

Wines with an alcohol content greater than or equal to 15.0% (volume fraction), made from grape juice which has undergone complete alcohol fermentation, and to which grape brandy, wine essence or edible alcohol has been added after a layer of typical yeast coating is produced on the free surface of the liquor.

#### 3.2.6 Flavoured wines

Wines made by soaking aromatic plants in the wine liquor base, or by adding the soaked liquid (or distilled liquid) of aromatic plants to it.

#### 3.2.7 Low-alcohol wines

Wines with an alcohol content within the range of 1.0-7.0% (volume fraction), made by complete or partial fermentation of fresh grapes or grape juice by using special processing techniques.

#### 3.2.8 Non-alcoholic wines

Wines with an alcohol content within the range of 0.5-1.0% (volume fraction), made by complete or partial fermentation of fresh grapes or grape juice by using special processing techniques.

#### 3.2.9 *V. amurensis* wines

Wines made by complete or partial fermentation of fresh mountain grapes (including *Vitis quinquangularis* Rehd., spine grape, autumn grape, etc) or

mountain grape juice.

### 3.3 Vintage wines

Wines in which the proportion of vintage wines should not be less than 80% (volume fraction) of the liquor, and the year indicated refers to the year when the grapes were picked.

### 3.4 Varietal wines

Wines in which the proportion of the wine made using the indicated grape variety should not be less than 75% (volume fraction) of the liquor.

### 3.5 Original wines

Wines in which the proportion of the wine made in the indicated place should not be less than 80% (volume fraction) of the liquor.

Remarks: no synthetic colouring agents, sweetening agents, flavouring essences or thickening agents may be added to any of the products.

## 4 Classification of products

### 4.1 Classification according to colours

#### 4.1.1 White wines

#### 4.1.2 Rosé wines

#### 4.1.3 Red wines

### 4.2 Classification according to sugar content

#### 4.2.1 Dry wines

#### 4.2.2 Semi-dry wines

#### 4.2.3 Semi-sweet wines

#### 4.2.4 Sweet wines

### 4.3 Classification according to carbon dioxide content

#### 4.3.1 Still wines

#### 4.3.2 Aerated wines

##### 4.3.2.1 Sparkling wines

##### 4.3.2.2 Semi-sparkling wines

## 5 Requirements

### 5.1 Sensory requirements<sup>1</sup>

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<sup>1</sup> In the case of special wines, these are to be implemented according to the related product standards.



**Table 1 Sensory Requirements**

Item		Requirement	
Appearance	Colouration	White wines	Almost uncoloured, pale yellow, light yellow, grain-coloured, golden.
		Red wines	Ultra red, deep red, ruby red, reddish brown, brownish red.
		Rosé wines	Pink, light rose-coloured, light red.
	Transparency	Transparent, lustrous, no obvious suspended solids (a small amount of cork residue is acceptable for cork-sealed wines, and a small amount of sediment is acceptable for wines more than one year old).	
Carbonation	When poured into a glass, aerated wines should exhibit closely clustered carbonation with a certain level of sustainability.		
Fragrance and Flavour	Fragrance		Pure, elegant, pleasant, harmoniously fruity and aromatic. Mellow wines should have an aged or mellow oak wood aroma.
	Flavour	Dry, semi-dry wines	Pure, elegant and clean taste, pleasant fruity scent, full-bodied.
		Semi-sweet, sweet wines	Sweet, mellow taste, aged wine scent, acidity-sweetness balance, full-bodied.
		Aerated wines	Fine, mellow, harmoniously pleasant taste and specific scent of fermented and aerated wine, sharp-tasting.
Typicality		Characteristics and style of grape species and product type as clearly labelled	
Remarks: for sensory evaluation, please refer to Appendix A (normative appendix), “Description for the Sensory Classification and Evaluation of Wines”			

## 5.2 Physical and Chemical Standards<sup>2</sup>

They must meet the requirements of Table 2.

<sup>2</sup> In the case of special wines, these are to be implemented according to the related product standards.

Table 2 Physical and Chemical Standards

Item		Requirement	
Alcohol content <sup>a</sup> (20°C) / % (volume fraction) $\geq$	Wines	7.0	
Total sugar <sup>d</sup> (measured by grape glucose) / (g/l)	Still wines	Dry wines <sup>b</sup> $\leq$	4.0
		Semi-dry wines <sup>c</sup>	4.1-12.0
		Semi-sweet wines	12.1-45.0
		Sweet wines $\geq$	45.1
	Sparkling wines	Natural sparkling wines $\leq$	12.0 (tolerable deviation 3.0)
		Very dry sparkling wines	12.1-17.0 (tolerable deviation 3.0)
		Dry sparkling wines	17.1-32.0 (tolerable deviation 3.0)
		Semi-dry sparkling wines	32.1-50.0
		Sweet sparkling wines $\geq$	50.1
Real grape content (g/l) $\geq$	White wines	16.0	
	Rosé wines	17.0	
	Red wines	18.0	
Volatile acids (measured by acetic acids) / (g/l) $\leq$		1.0	
Citric acids / (g/l) $\leq$	Dry, semi-dry, semi-sweet wines	1.0	
	Sweet wines	2.0	
Carbon dioxide (20°C) / MPa	Semi-sparkling wines	$< 250\text{ml/bottle}$	0.05-0.29
		$\geq 250\text{ml/bottle}$	0.05-0.34
	Sparkling wines	$< 250\text{ml/bottle}$ $\geq$	0.30
		$\geq 250\text{ml/bottle}$ $\geq$	0.35
Total sulphur dioxide (mg/l) $\leq$	Dry wines	200	
	Other types of wine	250	
Iron (mg/l) $\leq$	8.0		
Copper $\leq$	1.0		
Methyl alcohol (mg/l) $\leq$	White, rosé wines	150	
	Red wines	300	
Lead (Pb) (mg/l) $\leq$	0.2		
Benzoic acid (measured by benzoic acids) (mg/l) $\leq$		50	
Sorbic acid or potassium sorbate (measured by sorbic acids) / (mg/l) $\leq$		200	
Remarks: no limit is set for total acids, which are expressed using the actual test value (measured by tartaric acids, g/l).			
<sup>a</sup> For alcohol content, the difference between the value indicated on the label and the actual test value shall not exceed $\pm 1.0\%$ (volume fraction). <sup>b</sup> When the difference between the total sugar content and total acids (measured by tartaric acids) is $\leq 2.0$ g/l, the maximum sugar content is 9.0 g/l. <sup>c</sup> When the difference between the total sugar content and total acids (measured by tartaric acids) is $\leq 2.0$ g/l, the maximum sugar content is 18.0 g/l. <sup>d</sup> The total sugar content requirement for semi-sparkling wines is the same as that for still wines.			

- 5.3 Requirements in terms of micro-organisms  
They should meet the requirements of GB 2758.
- 5.4 Net content  
Implemented according to “Methods of Metrological Inspection Management for Pre-packaged Commodities with Fixed Content”.
6. Analytical Methods
- 6.1 Sensory requirements  
Implemented according to GB/T 15038.
- 6.2 Physical requirements (except lead, benzoic acids, sorbic acids)  
Implemented according to GB/T 15038.
- 6.3 Lead  
Implemented according to GB/T 5009.12.
- 6.4 Benzoic acids, sorbic acids  
Implemented according to GB/T 5009.29.
- 6.5 Requirements in terms of micro-organisms  
Implemented according to JJF 1070.
- 7 Inspection Rules
- 7.1 Grouping of lots  
The products produced within the same production period, of the same type, the same quality, in the same package from the same factory, and with the same specifications, are regarded as the same lot.
- 7.2 Sampling
- 7.2.1 Take samples according to Table 3. When the net content of a single product package is less than 500 ml and the total sampling volume is less than 1,500 ml, the number of samples can be increased according to the proportion.

Table 3 Sampling Table

Range of Samples, Boxes	Number of Samples, Boxes	Number of Unit Samples, Bottles
< 50	3	3
51-1,200	5	2
1,201-3,500	8	1
Above 3,501	13	1

- 7.2.2 After sampling, the samples shall have a label attached to them indicating the name of the sample, its specifications in terms of variety, quantity, name of manufacturer, time and place of sampling, and the name of the person taking the samples. Two bottles of samples are sealed and stored for two months for

reference. All other samples shall be delivered to the laboratory to enable sensory, physical, chemical and hygiene inspections to be carried out.

### 7.3 Classification of inspection

#### 7.3.1 Ex-factory inspection

7.3.1.1 Before shipping from the factory, the products should be inspected lot by lot by the Quality Supervision and Inspection Department of the production factory according to the standards and requirements. After they have passed the inspection and have had certificates attesting to this fact affixed to them, they can be shipped from the factory. The Product Quality Inspection Certificates (passed certificates) can be placed inside the packaging box, or placed inside the independent packaging box. Alternatively, words such as “passed” or “inspection passed” may be printed on the labels or the outside of the packaging box.

7.3.1.2 Inspection items: sensory requirements, alcohol content, total sugar, real grape content, volatile acids, carbon dioxide, total carbon dioxide, net content, and total number of falling bacteria according to the micro-organism standard.

#### 7.3.2 Type inspection

7.3.2.1 Inspection items: all the required items in the Standard.

7.3.2.2 In general circumstances, the type inspection for each type of product is carried out every six months. Inspection should also be carried out in any of the following circumstances:

- a) when significant changes are made to the original auxiliary materials;
- b) when the key techniques or equipment are changed;
- c) when there is a new trial product, or the production of a product which is normally produced resumes, having been terminated for 3 months;
- d) when the result of ex-factory inspection is significantly different from that of the previous type inspection;
- e) when sampling is requested by the national quality supervision and inspection bodies according to the related requirements.

### 7.4 Judgment rules

#### 7.4.1 Classification of non-conformance

7.4.1.1 Type A non-conformance: sensory requirements, alcohol content, real grape content, volatile acids, total carbon dioxide, methanol alcohol, citric acids, lead, micro-organism standard, preservatives, net content, or labelling.

7.4.1.2 Type B non-conformance: total sugar, carbon dioxide, iron or lead.

7.4.2 If the inspection result is found to have two or fewer non-conforming items, twice the number of samples should be taken from the same lot of products to enable the non-conforming item to be re-inspected. The result of re-inspection

shall be regarded as a correct record.

- 7.4.3 If one of the following three circumstances is found in the re-inspection result, the lot of products is judged to be non-conforming:
- The lot has one item of Type A non-conformance;
  - The lot has one item of Type B non-conformance exceeding the stipulated value by over 50%;
  - The lot has two items of Type B non-conformance.
- 7.4.4 When there is a difference between the results found by the supplying and requesting parties, both parties can solve the problem by negotiation or by authorising the appropriate unit to carry out arbitrary inspection. The result of arbitrary inspection shall be regarded as a correct record.

## 8 Labelling

- 8.1 The labelling of the pre-packaged wines shall be implemented according to GB 10344, and shall contain an indication of the product type (or the sugar content) according to the sugar content.

Remarks: in the case of wines made from a single raw material, the materials and auxiliary materials do not need to be indicated. Wines to which preservatives have been added should have their actual names indicated.

- 8.2 If the label indicates the year, variety and origin of the wines, they should meet the definitions specified in subsections 3.3, 3.4 and 3.5.
- 8.3 Apart from indicating the product name as well as the name and address of the manufacturer (or distributor), the outer packaging carton should indicate the net content of the unit package and the total quantity.
- 8.4 The Labelling of Packaging and Storage Charts should meet the requirements of GB/T 191.

## 9 Packaging, Transportation, Storage

### 9.1 Packaging

- 9.1.1 The packaging materials should meet food hygiene requirements. The packaging materials of aerated wines should meet the related pressure resistance requirements.
- 9.1.2 The packaging containers should be cleaned, tightly sealed and have no leakage.
- 9.1.3 The outer packaging should be made from acceptable packaging materials, and meet the corresponding standards.

## 9.2 Transportation, storage

- 9.2.1 Wines sealed using cork (or an alternative) should be placed upside down or horizontally during storage.
- 9.2.2 During transportation and storage, the products should be kept clean, strong vibrations, sunshine and rainwater should be avoided, and they should be prevented from freezing.
- 9.2.3 The storage area should be cool, dry and well ventilated. No sunshine, rainwater or fire source should be present in the storage area.
- 9.2.4 The finished products should not have direct contact with any humid ground surface. They should not be stored with toxic, harmful or corrosive articles, or ones with an unpleasant odour.
- 9.2.5 The transportation temperature should be kept within the range of 5-35°C, while the storage temperature should be kept within the range of 5-25°C.

Appendix A  
(Normative Appendix)

Description for the Sensory Classification and Evaluation of Wines

Table A1

Grade	Description
Excellent-quality Product	The product should have the expected colour, be natural, pleasant to the eye, clear (transparent), lustrous, with a pure, dense, elegant and harmonious fruit fragrance (wine aroma), and harmonised scent of different fragrances. The taste should be fine, smooth, full-bodied, complete and long-lasting. The product should have the expected pleasant style.
Good-quality Product	The product should be as lustrous as expected, clear and transparent, with no obvious suspended solids, and it should have a pure and harmonious fruit scent (wine aroma). The taste should be pure, quite smooth, quite complete, elegant, and quite long-lasting. The product should have a good style.
Fair Product	The colour of the product is slightly different from the expected colour. It does not have an entirely natural feel, and there may be a small amount of sediment. The product should have the expected fragrance, have no strange odour, and have a balanced taste, but without being as harmonious and complete. It has no obvious defect.
Non-conforming Product	The colour of the product is obviously different from the expected colour. Its expected lustre is significantly absent, or its colour is dull. The product has an obvious strange fragrance or strange odour. It is light-bodied and inharmonious. It may have other obvious defects. (Except for the colour item, any product with one of the above items is judged to be a non-conforming product.)
Poor-Quality Product	The product does not possess the expected characteristics.