

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

SN/T 4675.19-2016

**Determination of sodium, manganese, potassium, calcium,
chromium, magnesium, iron, copper, zinc, arsenic, selenium,
silver, cadmium and lead in wine for export**

出口葡萄酒中钠、镁、钾、钙、铬、锰、铁、铜、锌、砷、硒、银、镉、铅的测
定

(English Translation)

Issued on: December 12, 2016

Implemented on: July 1, 2017

**Issued by: The General Administration of Quality Supervision, Inspection
and Quarantine**

Table of Contents

Foreword

1 Scope

2 Normative references

3 Method summary

4 Reagents and materials

Foreword

SN/T 4675 "Methods for Quality and Safety Analysis of Exported Wines" is divided into 30 parts.

- SN/T 4675.1 Determination of glycerol in exported wines;
- SN/T 4675.2 Determination of 2,3-butanediol in exported wines by gas chromatography;
- SN/T 4675.3 Determination of the carbon isotope ratio of ethanol in exported wines;
- SN/T 4675.4 Determination of lactic acid in exported wines;
- SN/T 4675.5 Determination of organic acids in exported wines by ion chromatography;
- SN/T 4675.6 Determination of glucose, fructose and sucrose in exported wines;
- SN/T 4675.7 Determination of acetaldehyde in exported wines by gas chromatography-mass spectrometry;
- SN/T 4675.8 Determination of 5-hydroxymethylfurfural in exported wines by liquid chromatography;
- SN/T 4675.9 Determination of diethylene glycol in exported wines by gas chromatography-mass spectrometry;
- SN/T 4675.10 Determination of ochratoxin A in exported wines by liquid chromatography-mass spectrometry/mass spectrometry;
- SN/T 4675.11 Determination of 7 anthocyanins in exported wines by ultra performance liquid chromatography;
- SN/T 4675.12 Determination of lysozyme in exported wines by liquid chromatography;
- SN/T 4675.13 Determination of 2,4,6-trichlorotoluene residues in exported wines by gas chromatography-mass spectrometry;
- SN/T 4675.14 Determination of natamycin in exported wines by liquid

chromatography-mass spectrometry/mass spectrometry;

---SN/T 4675.15 Determination of salicylic acid, dehydroacetic acid and p-chlorobenzoic acid in exported wines by liquid chromatography;

---SN/T 4675.16 Determination of fumaric acid in exported wines by liquid chromatography-mass spectrometry/mass spectrometry;

--- SN/T 4675.17 Determination of butyl tin content in exported wines by gas chromatography - mass spectrometry/mass spectrometry;

--- SN/T 4675.18 Determination of residual dithiocarbamate in exported wines.

---SN/T 4675.19 Determination of sodium, magnesium, potassium, calcium, chromium, manganese, iron, copper, zinc, arsenic, selenium, silver, cadmium and lead in exported wines;

---SN/T 4675.20 Determination of rare earth elements in exported wines by inductively coupled plasma mass spectrometry;

--- SN/T 4675.21 Determination of soluble inorganic salts in exported wines by ion chromatography;

---SN/T 4675.22 Determination of total sulfur dioxide in exported wines;

---SN/T 4675.23 Determination of ammonia nitrogen in exported wine and grape juice - Continuous flow analyzer method;

---SN/T 4675.24 Export wine Fu-Linshawa index determination spectrophotometer method;

--- SN/T 4675.25 Determination of the color of exported wine CIE1976 ($L^* a^* b^*$) color space method;

---SN/T 4675.26 Determination of turbidity of exported wines by scattered light method;

---SN/T 4675.27 Determination of alkaline ash in exported wines;

---SN/T 4675.28 Counts of bacteria, mold and yeast exported to wines;

---SN/T 4675.29 Real-time fluorescent PCR method for wine yeast test in exported wine;

---SN/T 4675.30 In the wine export, the Bayesian yeast test real-time fluorescent PCR method.

This part is the 19th part of SN/T 4675.

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

In the development of this part, Method 1 refers to the method of International Grape and Wine Organization (OIV) OIV-MA-AS323-07 "ICP-Multi-element analysis by MS method to increase the sampling amount to reduce the dilution factor and increase the internal

standard type; Method 2 refers to OIV-MA-AS322-13 "Measurement of Metal Elements in Wine by ICP-AES Method" Removes three elements of strontium, aluminum and strontium to increase the measurement of five elements. cadmium, chromium, lead, arsenic and silver.

The sample processing is changed to the digestion method and the internal standard is deleted.

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

This section drafted by. Huangpu Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China, China Inspection and Certification Group Guangdong Co., Ltd. Huangpu Branch Company, Shanghai Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China, Guangzhou Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China, People's Republic of China Guangdong Entry-Exit Inspection and Quarantine Bureau.

1 Scope

This part of SN/T 4675 specifies methods for the determination of sodium, magnesium, potassium, calcium, chromium, manganese, iron, copper, zinc, arsenic, selenium, silver, cadmium and lead in wine.

This section applies to the determination of sodium, magnesium, potassium, calcium, chromium, manganese, iron, copper, zinc, arsenic, selenium, silver, cadmium and lead in exported wine.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods First method inductively coupled plasma mass spectrometry (ICP-MS)

3 Method summary

The sample was digested to a certain volume by nitric acid digestion and injected into an inductively coupled plasma mass spectrometer for measurement. The sample to be analyzed is in an aqueous solution the aerosol form is introduced into the argon gas stream, after desolvation, gasification dissociation and ionization, part of the ions enter the vacuum system, where the positive ions follow the mass-to-charge ratio is separated and

the detector converts the separated ions into electron pulses. The size of the electron pulse is related to the concentration of the separated ions.

The elements in the test sample are quantified by comparison with known standard series or reference materials.

4 Reagents and materials

4.1

Water. in accordance with GB/T 6682.

4.2

Nitric acid (65%, mass concentration). excellent grade pure.

4.3

Nitric acid (65%, mass concentration). analytically pure.

4.4

Nitric acid (2 98, volume ratio). 20 mL of nitric acid (4.3) was slowly added to 980 mL of ultrapure water.

4.5

Nitric acid (30 70, by volume). Slowly add 300 mL of nitric acid (4.2) to 700 mL of ultrapure water.

4.6

Internal Standard Reserve (45Sc, 72Ge, 115In, 209Bi). Solvent with standard element solution or multi-element standard with standard substance certificate the concentration of liquid, Sc, Ge, In, Bi was 100 mg/L.

4.7

Internal standard solution (45Sc, 72Ge, 115In, 209Bi) 1mg/L. Take 1mL of Sc, Ge, In, Bi standard stock solution in a 100mL volumetric flask, Dilute to the mark with nitric acid (4.4), shake well, and the concentration of this solution is 1 mg/L.

4.8

Standard stock solutions for each element. units containing standard substance certificates for sodium, magnesium, potassium, calcium, chromium, manganese, iron, copper, zinc, arsenic, selenium, silver, cadmium and lead Standard solution or multi-element mixed standard solution.

4.9

High purity argon or hydraulic. purity greater than 99.999%.