

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Technical requirement for environmental labeling products - Faucets (English Translation)

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Foreword

This Standard was formulated with a view to implement the "People's Republic of China Environmental Protection Law", save resources and reduce the impact of faucets in the production and use on human health and the environment.

During the formulating, this Standard mainly used the limits and test methods of heavy metal elements such as lead, cadmium, chromium and arsenic in NSF/ANSI 61-2007 "Drinking Water System Components - Health Effects" by US National Sanitation Foundation and the American National Standards Institute as reference. Combined with China's national conditions, it set the requirements for the precipitation amount of lead, cadmium, chromium and arsenic in faucets.

This standard is a guiding standard and applicable to certification of China environmental labeling product.

This Standard was proposed by Department of Science and Technology Standards of State Environmental Protection Administration.

The drafting organizations of this Standard. Environment and Development Center of State Environmental Protection Administration, Center for Development and Promotion of Science and Technology of Ministry of

Construction, China Association of Decorative Building Materials, National Research Center for Environmental Analysis and Measurement, Architectural Hardware Sub-technical Committee of National Technical Committee of Standardization for Hardware Product, Foshan Quality Supervision and Inspection Center, MOEN Guangzhou Water Heating Equipment Co., Ltd., JOMOO Group Co., Ltd, Brilliant Water Heating Group Co., Ltd., Foshan Shunde Meijie Sanitary Ware Industrial Co., Ltd. AND Sunlot Group.

This Standard was approved by State Environmental Protection Administration on December 21, 2007.

This Standard shall be implemented since April 1, 2008.

This Standard shall be interpreted by State Environmental Protection Administration.

Technical requirement

for environmental labeling products

Faucets

1 Scope

This Standard specifies the faucet environmental labeling products' definition, basic requirements, technical contents, and inspection methods.

This Standard is applicable to faucets, such as ordinary faucets, wash basin faucets and kitchen faucets, of which the nominal diameters are DN15, DN20 and DN25, the nominal pressure is not more than 1.0 MPa, the medium temperature for use is not more than 90°C, and are installed in sanitary facilities in the kitchen, bathroom (e.g. toilet, shower) and others. This Standard does not apply to tub faucets and shower faucets.

2 Normative References

This Standard quoted the articles of the following documents. For undated reference documents, the latest versions apply to this Standard.

GB 18145 Ceramic Cartridge Faucets

GB/T 5750.6-2006 Standard examination methods for drinking water - Metal parameters

GB/T 18870 Technical conditions for water saving products and general regulation for management

QB 1334 General technical specification for faucets

CJ/T 194 Non-contact water supply device

3 Terms and definitions

The following terms and definitions are applicable to this Standard.

3.1 Faucet

Annex A (Informative Annex)

Test and evaluation methods for the precipitation amount of Pb, Cr, Cd and As in soaking solution of faucets

A.1 Principle

Use the simulated water that contains calcium chloride, sodium bicarbonate and sodium hypochlorite to soak the contact-part between the interior surface of the faucet and the water. Adopt inductively coupled plasma inorganic mass spectrometry (ICP-MS) or graphite furnace atomic absorption spectrometry (AAS) to determine the heavy metal elements in the soaking solution. After the measured values of precipitation amount of Pb, Cr, Cd and As are processed through standardization, compare with the limits listed in Table 1.

A.2 Reagents

A.2.1 Distilled or deionized water. the conductivity is less than 2 $\mu\text{S}/\text{cm}$;

A.2.2 Sodium hypochlorite (chemically pure);

A.2.3 Anhydrous calcium chloride (analytically pure);

A.2.4 Anhydrous sodium bicarbonate (analytically pure);

A.2.5 Pb, Cd, Cr and As standard solutions that meet the instrument conditions;

A.2.6 Concentrated nitric acid (guaranteed reagent).

A.3 Instrument

A.3.1 Graphite furnace atomic absorption spectrometer, inductively coupled plasma inorganic mass spectrometry;

A.3.2 Commonly-use laboratory glassware;

A.3.3 PVC bottles.

A.4 Sample soaking experiment

A.4.1 Sample preparation and stabilization

A.4.2.2 Preparation of soaking solution (pH = 8.0, hardness of 100mg / L, available chlorine of 2 mg / L)

Take 25 ml of bicarbonate buffer (A.4.2.1.5), 25 ml of calcium hardness stock solution (A.4.2.1.4) and the required chlorine stock solution (A.4.2.1.1); dilute to 1 L with purified water. Prepare the soaking solution required according to this ratio.

A.4.2.3 Sample soaking

Place the faucet's switch to the fully open position; use the soaking solution to fill the interior space of the faucet (if there are both hot- and cold-water channels, both channels shall be included); accurately record the interior space volume of the faucet according to the amount of the soaking solution. Use a clean cork or rubber stopper coated with polytetrafluoroethylene film to plug the faucet ends. There are two methods for the sample soaking experiment. The first round experiment uses the method (1).

Method (1). soak at $(23 \pm 2)^{\circ}\text{C}$ in the dark conditions for (24 ± 0.5) h. Remove the soaking solution into the PVC bottle. The same faucet shall be in the soaking experiment for 3 d under the same conditions.

Collect 3 faucet soaking solution samples in total in this experiment.

These samples shall be used to detect the precipitation amount of Pb, Cr, Cd and As.

Method (2). the evaluation of Pb's precipitation amount shall be conducted with other elements respectively. When evaluating Pb's precipitation