

ICS 77.120.99



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

GB/T 10119-2008

Replacing GB/T 10119-1988

Determination of dezincification corrosion resistance of brass

黄铜耐脱锌腐蚀性能的测定

(English Translation)

Issued on: March 31, 2008

Implemented on: September 1, 2008

Issued by: SAMR; SAC

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1 Scope

This standard specifies the method for determining the dezincification corrosion resistance of brass materials.

This standard applies to the determination of dezincification corrosion resistance of brass materials.

2 Principle of methods

Because different brass materials have different dezincification corrosion rates, the use of copper chloride solution can accelerate the dezincification corrosion of brass, thereby producing different depths of dezincification layers, the depth of which is measured by a metallurgical microscope.

3 Reagents and materials

3.1

Copper chloride solution (10 g/L)

Dissolve 12.7 g of copper chloride ($\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$) in distilled water or deionized water. Dilute it to 1000 mL (prepare it before use).

3.2

Epoxy resin or other non-conducting materials, which have similar properties.

3.3

Anhydrous ethanol.

4 Test instrument and equipment

4.1

Test device

Constant temperature water bath or oil bath.

4.2

Metallurgical microscope (with micrometer eyepiece).

4.3

Glass beaker (1000 mL).

4.4

Hair dryer.

4.5

Polishing machine.

4.6

Dryer.

5.1 Sampling

5.1.1

Forgings and castings specimens shall be taken at the thinnest and thickest part of the cross-section, respectively. The specimens of extruded, drawn or rolled products shall be taken, parallel and perpendicular to the processing direction.

5.1.2

Take at least 3 parallel specimens each time.

5.1.3

The size of the specimen shall be as close as possible to 10 mm x 10 mm x 10 mm. The exposed area of the specimen shall be about 100 mm². If this requirement is not met, it shall take the largest area.

5.1.4

When sampling, it shall keep the original state of the specimen, to avoid deformation of the specimen, due to clamping or sawing, OR other changes that affect the test results.

5.2 Preparation of specimen

5.2.1

It is embedded by epoxy resin or other non-conducting materials (3.2).

5.2.2

The exposed surface of the specimen is ground by metallographic sandpaper; finally polished by No.500 water sandpaper.

5.2.3

Use water to wash the ground specimen. Use absolute ethanol to wipe it. Use hair dryer (4.4) to blow it dry. If the corrosion test cannot be performed in time, it shall be stored in a desiccator (4.6).

6.1 Test conditions

6.1.1

Temperature of test solution

75 °C ± 2 °C

6.1.2

Volume of test solution

ML of copper chloride solution (3.1) is required, for every 100 mm² of the actual exposed area of the specimen.

6.1.3

Test time

24 h continuously

6.1.4

Only parallel specimens of the same alloy material can be placed in each test beaker (4.3).