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**Infrared Optical Glass** 

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# **Infrared Optical Glass**

# 1 Scope

This Standard specifies the classification, naming, requirements, test methods, inspection rules, marking, packaging, transportation and storage of infrared optical glass.

This Standard is applicable to infrared optical glass material that is used to manufacture infrared optical component.

# 2 Normative References

The following documents are indispensable to the application of this Standard. In terms of references with a specified date, only versions with a specified date are applicable to this Standard. The latest version (including all the modifications) of references without a specified date is also applicable to this Standard.

GB/T 191 Packaging - Pictorial Marking for Handling of Goods

GB/T 7962.7 Colorless Optical Glass Test Methods - Examination Method for Extent of Stripe

GB/T 7962.8 Test Methods of Colorless Optical Glass - Part 8: Bubble

GB/T 7962.14 Test Methods of Colorless Optical Glass - Part 14: Resistance to Acid

GB/T 7962.15 Test Methods of Colorless Optical Glass - Part 15: Resistance to Humidity

GB/T 7962.16 Test Methods of Colorless Optical Glass - Part 16: Linear Thermal Expansion Coefficient, Transformation Temperature and Yield Point Temperature

GB/T 7962.18 Test Methods of Colorless Optical Glass - Part 18: Knoop Hardness

GB/T 7962.20 Test Methods of Colorless Optical Glass - Part 20: Density

GB/T 14148-2011 Glass Blank of Ophthalmic Lenses

GB/T 32561.2 Measuring Method for Chalcogenide Infrared Optical Glass - Part 2: Degree of Stripe

GB/T 32561.3 Measuring Method for Chalcogenide Infrared Optical Glass - Part 3: Impurity

the test value of  $n_4$  and  $n_{10.6}$  and the nominal value of  $n_4$  and  $n_{10.6}$ .

#### **6.2 Infrared Transmittance**

Infrared transmittance can be obtained through the test conducted in accordance with GB/T 36403; the average transmittance of required band can be calculated.

#### 6.3 Impurity

Medium-wave infrared optical glass: conduct the test in accordance with impurity test method stipulated in GB/T 7962.8.

Long-wave infrared optical glass: conduct the test in accordance with impurity test method stipulated in GB/T 32561.3

## 6.4 Degree of Stripe

Medium-wave infrared optical glass: conduct the test in accordance with stripe degree test method stipulated in GB/T 7962.7.

Long-wave infrared optical glass: conduct the test in accordance with stripe degree test method stipulated in GB/T 32561.2.

#### 6.5 Surface Defect

Conduct the inspection with measuring instrument and magnifier (division value ≤ 0.02 mm).

#### 6.6 Crack

Please refer to Appendix B for the method of testing cracks in infrared optical glass.

## 6.7 Edge Chip

Conduct the inspection with measuring instrument and magnifier (division value ≤ 0.02 mm).

#### 6.8 Dimensional Deviation

Deviation of length and diameter: conduct the test with measuring instrument (division value  $\leq 0.1$  mm). Randomly select 3 different positions and conduct the test; take the average value of the results.

Deviation of thickness: use measuring instrument (division value  $\leq$  0.1 mm) to measure the thickness of two symmetrical dots on the same meridian (5.0 mm from the edge); calculate the deviation of thickness; there shall be at least 4 measuring dots on each model; the maximum value of the thickness deviation shall be taken.

#### 6.9 Resistance to Humidity

## 7.4 Sampling and Determination

Sampling and determination shall be implemented in accordance with stipulations in Chapter 7 in GB/T 14148-2011.

# 8 Marking, Packaging, Transportation and Storage

## 8.1 Marking

- **8.1.1** In terms of each batch of products, the certification shall indicate manufacturer's name and address, product standard number, nameplate, specification, quantity, batch number, exit-factory number, inspection data and exit-factory date.
- **8.1.2** In terms of each batch of products, the packing list shall indicate manufacturer's name and address, product standard number, nameplate, specification and quantity.
- **8.1.3** The external packaging box shall indicate manufacturer's name, address and trademark, product nameplate, specification, quantity, shipment date, standard number and pictorial marking of packaging shall comply with stipulations in GB/T 191.

## 8.2 Packaging

Isolation packaging shall be adopted in single piece of product; products shall be tightly placed in the internal packaging box. Packaging box shall be tightly filled up.

## 8.3 Transportation and Storage

- **8.3.1** Products shall be stored in dry and ventilated warehouse; keep away from rain and humidity.
- **8.3.2** During transportation, products shall not be collided or shaken; products shall be handled slightly.

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