

ABSTRACT

HEAT RAY-REFLECTING GLASS

A heat ray-reflecting glass is disclosed, which comprises a glass substrate having on the surface thereof a coating film comprising cobalt oxide and nickel oxide. The coating film has the following characteristics:

(1) In a first aspect of the present invention, the coating film has a surface resistivity of not less than $10^4 \Omega/\text{square}$ and a thickness of not less than 10 nm, the content of cobalt in the coating film based on the total metal content per unit area is from 60 to 90% by weight, and the content of nickel in the coating film based on the total metal content per unit area is from 10 to 40% by weight.

(2) In a second aspect of the present invention, the coating film further comprises a metal oxide containing at least one metal selected from titanium, vanadium, chromium, manganese, copper, and zirconium, and has a surface resistivity of not less than $10^4 \Omega/\text{square}$ and a thickness of not less than 10 nm, the content of cobalt in the coating film based on the total metal content per unit area is from 60 to 89% by weight, the content of nickel in the coating film based on the total metal content per unit area is from 10 to 39% by weight, and the content of at least one metal selected from titanium, vanadium, chromium, manganese, copper, and zirconium in the coating film based on the total metal content per unit area is from 1 to 30% by weight.



(3) In a third aspect of the present invention, the coating film further comprises an iron oxide, and has a surface resistivity of not less than 10^4 Ω /square and a thickness of not less than 10 nm, and the content of iron in the coating film based on the total metal content per unit area is from 1.0 to 4.5% by weight.

(4) In a fourth aspect of the present invention, the coating film has a surface resistivity of not less than 10^4 Ω /square and a thickness of from 10 to 70 nm, and consisting essentially of oxides having spinel structures comprising cobalt oxide and nickel oxide, and a reflecting color tone viewed from the side of said heat ray-reflecting glass opposite to said coating film being green series color.

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