ABSTRACT

For forming a thin ruthenium film of good quality by CVD method, it is necessary to form the thin film at low temperature. There hence is a desire for a ruthenium compound having a high reactivity to heat. This invention relates to a method of producing a ruthenium-containing film by CVD or the like using, as a raw material, a ruthenium complex mixture containing (2,4-dimethylpentadienyl)(ethyl-cyclopentadienyl)ruthenium and bis(2,4-dimethylpentadienyl)ruthenium, the amount of the latter compound being 0.1 to 100% by weight based on the weight of (2,4-dimethylpentadienyl)(ethylcyclopentadienyl)ruthenium, and the like.