PHOTOMASK BLANK MANUFACTURING METHOD, PHOTOMASK BLANK, PHOTOMASK, AND PATTERN TRANSFER METHOD

ABSTRACT

The method for manufacturing a photomask blank according to the present invention, when manufacturing a photomask blank having at least one functional layer on a transparent substrate, in a step of film-formation of such a functional film where the functional film includes a chromium-containing element and an a metallic element that is capable of bringing a mixture of the metallic element and the chromium into a liquid phase at a temperature of 400°C or lower, a chromium target (target A) and a target (target B) mainly containing at least one kind of the metallic element are simultaneously sputtered (co-sputtered). The present invention provides a technique for manufacturing a functional film having a small variation in its characteristics such as optical density and a low detect, and showing a high etching rate.

Fig. 1