Reflective Photomask Blank, Method for Manufacturing
Reflective Photomask, and Reflective Photomask

ABSTRACT

A reflective photomask blank includes a substrate, a multilayer reflection film that is formed on the substrate and reflects exposure light being light in extreme ultraviolet range, a protection film that is formed on the multilayer reflection film to protect the multilayer reflection film, a light-absorbing film that is formed on the protection film and absorbs the exposure light, and a hard mask film that is formed on and in contact with the light-absorbing film and functions as a hard mask in pattering the light-absorbing film by dry etching. The hard mask film is constituted by a multilayer including a first layer and a second layer, the first layer is disposed at the side remotest from the substrate, and is composed of a material containing silicon and free of chromium, and the second layer is composed of a material containing chromium and free of silicon.

Figure 1