REFLECTIVE MASK BLANK, REFLECTIVE MASK AND METHOD OF MANUFACTURING THE SAME, AND METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE

ABSTRACT

Provided is a reflective mask blank that enables to further reduce the shadowing effect of a reflective mask and form a fine and highly accurate absorber pattern.

The reflective mask blank comprising a multilayer reflective film, an absorber film, and an etching mask film disposed on a substrate in this order, wherein the absorber film comprises a buffer layer and an absorption layer provided on the buffer layer, the buffer layer comprises a material comprising tantalum (Ta) or silicon (Si) and a film thickness of the buffer layer is 0.5 nm or more and 25 nm or less, the absorption layer comprises a material comprising chromium (Cr) and an extinction coefficient of the absorption layer with respect to EUV light is higher than the extinction coefficient of the buffer layer with respect to the EUV light, and the etching mask film comprises a material comprising tantalum (Ta) or silicon (Si) and a film thickness of the etching mask film is 0.5 nm or more and 14 nm or less.

Fig. 1