

## ABSTRACT

An object of the present invention is to provide a reflective photomask that can reduce deterioration in transferability due to a phase difference in a reflective portion and improve  
5   adhesion (interlayer adhesion) between a capping layer and a protective layer while having  
excellent hydrogen radical resistance. A reflective mask (10) according to the present  
embodiment includes a substrate (1), a multilayer reflective film (2), a capping layer (3), an  
absorber (4), and a protective layer (5) formed on the capping layer (3), on the absorber (4), and  
on a sidewall of the absorber (4). An extinction coefficient  $k$  of the absorber (4) with respect  
10   to EUV light is 0.04 or more, the capping layer (3) and the protective layer (5) are formed of  
the same material, a reflectivity of a reflective portion, which is a region where the absorber (4)  
is not formed on the capping layer (3), with respect to the EUV light is 50% or more, a total  
film thickness of the capping layer (3) and the protective layer (5) is 3 nm or more, and the  
capping layer (3) and the protective layer (5) have resistance to hydrogen radicals.

Fig.1