

ABSTRACT

An object of the present invention is to provide an EUV photomask blank and an EUV photomask having high resistance to hydrogen radicals, low EUV reflectivity, and a high
5 OD value. A reflective mask blank (10) according to an embodiment at least includes a substrate (1), a multilayer reflective film (2), a capping layer (3), and a low-reflective portion (5). The low-reflective portion (5) is formed by alternately depositing a first absorption film (51) and a second absorption film (52). The first absorption film (51) has high hydrogen radical resistance. An extinction coefficient or a refractive index of the first absorption film (51) is different from
10 an extinction coefficient or a refractive index of the second absorption film (52), and the extinction coefficient of the second absorption film (52) with respect to EUV light is 0.04 or more.

FIG. 1