

ABSTRACT

The present invention is intended to provide a reflective photomask blank and a reflective photomask that suppress or reduce a shadowing effect of a reflective photomask for pattern transfer using light with a wavelength in an extreme ultraviolet region as a light source and that have hydrogen radical resistance. A reflective photomask blank (10) according to an embodiment of the present invention is a reflective photomask blank for producing a reflective photomask for pattern transfer using extreme ultraviolet light as a light source, and includes a substrate (1), a reflective layer (2) including a multi-layer film formed on the substrate (1), and an absorption layer (4) formed on the reflective layer (2). The absorption layer (4) is formed of a material containing a total of 50 atomic% or more of indium (In) and oxygen (O). An atomic number ratio (O/In) of oxygen (O) to indium (In) in the absorption layer (4) exceeds 1.5, and a film thickness of the absorption layer (4) is in a range of from 17 nm to 45 nm.

Figure 1