

ABSTRACT

Disclosed is a photomask comprising: a transparent substrate; and a multi-layer light shielding pattern film disposed on the transparent substrate, wherein the multi-layer light shielding pattern film comprises: a first light shielding film; and a second light shielding film disposed on the first light shielding film and comprising a transition metal and at least one selected from the group consisting of oxygen and nitrogen, and wherein a surface roughness W_r of the measuring zone satisfies Equation 1 below:

[Equation 1]

$$0 \text{ nm} < W_r - W_o \leq 3 \text{ nm}$$

where, in the Equation 1 above, W_o is a surface roughness of the measuring zone before soaking and washing processes, W_r is a surface roughness of the measuring zone after soaking in SC-1 (standard clean-1) solution and washing with ozone water, and the SC-1 solution comprises NH_4OH , H_2O_2 , and H_2O .

Fig 1