

PHOTOMASK BLANK, METHOD FOR PRODUCING PHOTOMASK, AND PHOTOMASK

ABSTRACT

A photomask blank including a substrate and a chromium-containing film, where the latter has three layers from a side remote from the substrate, all three of which contain chromium. The first layer contains 44 atom % or less of chromium, 30 atom % or more of oxygen, 26 atom % or less of nitrogen, and a thickness of 8 to 20 nm. The second layer contains 66 to 92 atom % of Cr, 8 to 34 atom % of N, and a thickness of 40 to 70 nm. The third layer contains 44 atom % or less of Cr, 30 atom % or more of O, 26 atom % or less of N, and a thickness of 10 nm or less. A photomask blank having good surface roughness and low resistivity which makes it possible to read a barcode pattern.

[Fig.1]