

[DOCUMENT] ABSTRACT

Provided is a reflective mask blank that can provide a phase shift film that can further reduce crystallinity (further enhance microcrystalline or amorphous characteristic) while satisfying optical characteristics of the phase shift film.

The reflective mask blank has a multilayer reflective film and a thin film for pattern formation in this order on a main surface of a substrate; the thin film consists of a single layer structure consisting of a ruthenium-containing layer at least containing ruthenium, nitrogen, and oxygen or a multilayer structure including the ruthenium-containing layer; and when the ruthenium-containing layer is subjected to an analysis by an In-Plane measurement of an X-ray diffraction method to obtain an X-ray diffraction profile where, provided I_{P1} is the maximum value of diffraction intensity within a diffraction angle 2θ ranging from 65 degrees to 75 degrees and I_{avg} is the average value of diffraction intensity within a diffraction angle 2θ ranging from 55 degrees to 65 degrees, I_{P1}/I_{avg} is greater than 1.0 and less than 3.0.