CLAIMS:

1. A photomask blank for a material of a photomask used in pattern transfer by exposure light having a wavelength of up to 250 nm, the photomask blank comprising a transparent substrate, and a chromium-containing film directly formed on the substrate or formed with an optical film intervened between the transparent substrate and the chromium-containing film, the chromium-containing film being susceptible to oxygen-containing chlorine-based dry etching, wherein the chromium-containing film consists of:

(i) only a region (A) composed of a chromium compound containing chromium, oxygen and carbon, wherein each of contents of the elements contained in the chromium compound is continuously varied in the thickness direction of the region (A), and toward the substrate, the content of chromium increases, and the content of carbon decreases;

(ii) the region (A), and a region (B) composed of a chromium compound containing chromium, oxygen and carbon, and contiguous to either the substrate side or the side remote from the substrate, wherein each of contents of the elements contained in the chromium compound is constant in the thickness direction of the region (B); or

(iii) the region (A) or the regions (A) and (B), and a region (C) composed of a chromium compound containing chromium, oxygen and carbon, and disposed at the side remotest from the substrate, wherein each of contents of the elements contained in the chromium compound is continuously varied in the thickness direction of the region (C), and toward the substrate, the content of oxygen decreases.

2. The photomask blank of claim 1, wherein in the region (A), a difference between the maximum and minimum chromium contents (at%) is at least 3, and in the region (A) or the regions (A) and (B), chromium content is at least 45 at%.

3. The photomask blank of claim 1, wherein in the region (A), a difference between the maximum and minimum carbon contents (at%) is at least 5.

4. The photomask blank of claim 1, wherein the chromium compound composing the region (A) further contains nitrogen, and toward the substrate, the content of nitrogen increases.

5. The photomask blank of claim 1, wherein the chromium-containing film has a thickness of up to 50 nm.

6. The photomask blank of claim 1, wherein the chromium-containing film has an optical density of at least 1.5 with respect to the exposure light.

7. The photomask blank of claim 1, wherein the chromium-containing film is formed with the optical film intervened between the transparent substrate and the chromium-containing film, and the optical film comprises a phase shift film composed of a material containing silicon and free of a transition metal, or a material containing a transition metal and silicon.

8. The photomask blank of claim 7, wherein the total optical density of the chromium-containing film and the phase shift film is at least 2.5.

9. The photomask blank of claim 1, comprising a hard mask film disposed on the chromium-containing film and composed of a material containing silicon.

10. A method of manufacturing a photomask comprising the step of patterning the chromium-containing film of the photomask blank of claim 1 by oxygen-containing chlorine-based dry etching.