CLAIMS

1. A reflective mask blank comprising a multilayer reflective film and an absorber film that are provided in an order mentioned on a substrate, wherein

the absorber film includes a material including an amorphous structure containing Tin (Sn) and at least one or more elements selected from tantalum (Ta), and chromium (Cr),

content of the tin (Sn) is 50 atomic % or more and 75 atomic % or less,

content of the tantalum (Ta) or chromium (Cr) is more than 15 atomic % and less than 40 atomic %, and

the absorber film has a film thickness of 55 nm or less.

2. The reflective mask blank according to claim 1, wherein the absorber film has an extinction coefficient of 0.035 or more.

3. The reflective mask blank according to claim 1 or 2, wherein

the material of the absorber film contains the tin (Sn) and the tantalum (Ta), and

composition ratio of the tin (Sn) to the tantalum (Ta) (Sn : Ta) is 9 : 1 to 1 : 9.

4. The reflective mask blank according to claim 1 or 2, wherein the material of the absorber film contains the tin (Sn) and the chromium (Cr), and

composition ratio of the tin (Sn) to the chromium (Cr) (Sn : Cr) is 9 : 1 to 1 : 9.

5. The reflective mask blank according to any one of claims 1 to 4, wherein the material of the absorber film contains nitrogen (N), oxygen (O), carbon (C), or boron (B).

6. The reflective mask blank according to any one of claims 1 to 5, wherein

the material of the absorber film contains nitrogen (N), and

content of the nitrogen (N) in the amorphous metal is 2 atomic % or more and 55 atomic % or less.

7. The reflective mask blank according to any one of claims 1 to 6, wherein a protective film is provided between the multilayer reflective film and the absorber film.

8. The reflective mask blank according to any one of claims 1 to 7, wherein an etching mask film is provided on the absorber film, and the etching mask film includes a material including a material including chromium (Cr) or a material including silicon (Si).

9. A reflective mask having an absorber pattern in which the absorber film in the reflective mask blank according to any one of claims 1 to 8 is patterned.

10. A method of manufacturing a reflective mask, the method comprising: forming

an absorber pattern by patterning the absorber film of the reflective mask blank according to any one of claims 1 to 8 by dry etching using a chlorine-based gas.

11. A method of manufacturing a semiconductor device, the method comprising: a step of setting the reflective mask according to claim 9 in an exposure apparatus having an exposure light source that emits EUV light and transferring a transfer pattern to a resist film formed on a transfer-receiving substrate.