CLAIMS

1. A method of manufacturing a passivation film, the method comprising

a passivation process in which a substrate on the surface of which at least one of germanium and molybdenum is contained is treated with a passivation gas containing an oxygen-containing compound, which is a compound containing an oxygen atom in a molecule, and hydrogen sulfide to form a passivation film containing a sulfur atom on the surface of the substrate, wherein

concentration of the oxygen-containing compound in the passivation gas is from 0.001 mole ppm to less than 75 mole ppm,

wherein the passivation gas is substantially consisting of oxygen gas and hydrogen sulfide, or substantially consisting of oxygen gas, hydrogen sulfide and an inert gas.

2. The method of manufacturing a passivation film according to claim 1, wherein the concentration of the oxygen-containing compound in the passivation gas is from 0.5 mole ppm to 65 mole ppm.

3. The method of manufacturing a passivation film according to claim 1 or 2, wherein the oxygen-containing compound is at least one of oxygen gas and water.

4. The method of manufacturing a passivation film according to any one of claims 1 to 3, wherein the substrate comprises a film containing at least one of germanium and molybdenum on the surface of the substrate.

5. The method of manufacturing a passivation film according to any one of claims 1 to 4, wherein the substrate is treated with the passivation gas under conditions of a temperature of from 20°C to 1,500°C and a pressure of from 1 Pa to 101 kPa.