CLAIMS

1. A magnetic-disk glass substrate comprising

as a glass composition, Li_2O in an amount of 0.1 to 1 mol%, the glass substrate being made of amorphous aluminosilicate glass, wherein

a fracture toughness value K_{IC} [$MPa \cdot m^{1/2}$] is greater than or equal to 1 [$MPa \cdot m^{1/2}$], and

a compressive stress layer is provided on a surface of the glass substrate by chemical strengthening, a depth D [μm] of the compressive stress layer satisfying $D \geq 57 \cdot K_{IC}^{-1.6}$, and D≥20 [μm].

2. The magnetic-disk glass substrate according to claim 1, wherein

a glass transition point temperature T_g is greater than or equal to 650°C.

3. The magnetic-disk glass substrate according to claim 1 or 2, comprising:

as the glass composition,

SiO_2 in an amount of 55 to 78 mol%;

Li_2O in an amount of 0.1 to 1 mol%;

Na_2O in an amount of 2 to 15 mol%; and

MgO, CaO, SrO, and BaO in a total amount of 10 to 25 mol%, wherein

a molar ratio of a CaO content with respect to a total content of MgO, CaO, SrO, and BaO (CaO/(MgO+CaO+SrO+BaO)) is less than or equal to 0.20.

4. The magnetic-disk glass substrate according to any one of claims 1 to 3, comprising

as the glass composition, aluminosilicate glass that does not contain Ca.

5. A magnetic disk comprising the magnetic-disk glass substrate according to any one of claims 1 to 4, and a magnetic layer formed on the surface of the

glass substrate.

6. A method for manufacturing a magnetic-disk glass substrate, comprising:

processing for producing a disk-shaped glass substrate that contains Li_2O in an amount of 0.1 to 1 mol%, the glass substrate being made of amorphous aluminosilicate glass; and

processing for performing chemical strengthening on the glass substrate such that a fracture toughness value K_{IC} [MPa・$m^{1/2}$] is greater than or equal to 1 [MPa・$m^{1/2}$], and a depth D [μm] of a compressive stress layer to be provided on a surface of the glass substrate by the chemical strengthening satisfies $D \geq 57 \cdot K_{IC}^{-1.6}$ and D≥20 [μm].

7. The method for manufacturing a magnetic-disk glass substrate according to claim 6, wherein

the chemical strengthening processing is processing for immersing the glass substrate in a liquid molten salt mixture containing KNO_3 and $NaNO_3$, and the molten salt mixture contains KNO_3 in an amount of 55 to 85 mass%.

8. The method for manufacturing a magnetic-disk glass substrate according to claim 6 or 7, wherein

the glass substrate that has undergone the chemical processing contains:

as a glass composition,

SiO_2 in an amount of 55 to 78 mol%;

Li_2O in an amount of 0.1 to 1 mol%;

Na_2O in an amount of 2 to 15 mol%; and

MgO, CaO, SrO, and BaO in a total amount of 10 to 25 mol%, and

a molar ratio of a CaO content with respect to a total content of MgO, CaO, SrO, and BaO (CaO/(MgO+CaO+SrO+BaO)) is less than or equal to 0.20.

9. The method for manufacturing a magnetic-disk glass substrate according to any one of claims 6 to 8, wherein

the glass substrate comprises aluminosilicate glass that does not contain Ca.