CLAIMS

1. A glass,

which is a glass for a magnetic recording medium substrate or for a glass spacer for a magnetic recording and reproducing apparatus,

which is an amorphous oxide glass,

wherein an SiO_2 content ranges from 56 mol% to 80 mol%;

an Li_2O content ranges from 1 mol% to 10 mol%;

a B_2O_3 content ranges from 0 mol% to 4 mol%;

a MgO content is less than 14 mol%;

a total content of MgO and CaO (MgO + CaO) ranges from 9 mol% to 40 mol%; and

the oxide glass has a specific gravity of 2.75 g/cm^3 or less, a glass transition temperature of 650°C or higher, and a Young's modulus of 90 GPa or more.

2. A glass,

which is a glass for a magnetic recording medium substrate or for a glass spacer for a magnetic recording and reproducing apparatus,

which is an amorphous oxide glass,

wherein an SiO_2 content ranges from 56 mol% to 80 mol%;

an Li_2O content ranges from 1 mol% to 10 mol%;

a B_2O_3 content ranges from 0 mol% to 4 mol%;

a MgO content is less than 14 mol%;

a total content of MgO and CaO (MgO + CaO) ranges from 9 mol% to 40 mol%;

a mole ratio of a total content of SiO_2 and ZrO_2 relative to an Al_2O_3 content $((SiO_2 + ZrO_2)/Al_2O_3)$ ranges from 2 to 13; and

the oxide glass has a glass transition temperature of 650°C or higher, and a Young's modulus of 90 GPa or more.

3. The glass ~~for a magnetic recording medium substrate~~ according to claim 1 ~~or 2~~,

wherein an average linear expansion coefficient at 100°C to 300°C ranges from 40×10^{-7} to 70×10^{-7}/°C.

4. The glass ~~for a magnetic recording medium substrate~~ according to ~~any one of~~ claim~~s~~ 1 ~~to 3~~,

wherein a CaO content ranges from 0 mol% to 18 mol%.

5. The glass ~~for a magnetic recording medium substrate~~ according to ~~any one of~~ claim~~s~~ 1 ~~to 4~~,

wherein a total content of BaO and SrO ranges from 0 mol% to 2 mol%.

6. The glass according to claim 1,

wherein a total content of Li2O, Na2O, and K2O (Li2O + Na2O + K2O) ranges from 2.5 mol% to 10 mol%.

7. The glass according to claim 1,

wherein a total content of SnO2 and CeO2 (SnO2 + CeO2) ranges from 0.05 mol% to 2 mol%.

8. A magnetic recording medium substrate, which is comprised of the glass according to claim 1.

9. A magnetic recording medium comprising a magnetic recording layer on the magnetic recording medium substrate according to claim 8.

10. A magnetic recording and reproducing apparatus, comprising the magnetic recording medium according to claim 9.

11. The glass according to claim 1,
wherein the MgO content is equal to or less than 13.81 mol%.

12. The glass according to claim 2,
wherein the MgO content is equal to or less than 13.81 mol%.

13. The glass according to claim 2,
wherein an average linear expansion coefficient at 100°C to 300°C ranges from 40×10−7 to 70×10−7/°C.

14. The glass according to claim 2,
wherein a CaO content ranges from 0 mol% to 18 mol%.

15. The glass according to claim 2,
wherein a total content of BaO and SrO ranges from 0 mol% to 2 mol%.

~~6~~16. The glass ~~for a magnetic recording medium substrate~~ according to ~~any one of~~ claim~~s 1 to 5~~ 2,
wherein a total content of Li_2O, Na_2O, and K_2O ($Li_2O + Na_2O + K_2O$) ranges from 2.5 mol% to 10 mol%.

1~~7~~. The glass ~~for a magnetic recording medium substrate~~ according to ~~any one of~~ claim~~s 1 to 6~~ 2,
wherein a total content of SnO_2 and CeO_2 ($SnO_2 + CeO_2$) ranges from 0.05 mol% to 2 mol%.

~~8. The glass for a magnetic recording medium substrate according to any one of claims 1 to 7,~~
~~wherein a mole ratio of an SnO_2 content relative to a CeO_2 content~~

~~(SnO_2/CeO_2) is equal to or more than 1.~~

~~9~~18. A magnetic recording medium substrate, which is comprised of the glass ~~for a magnetic recording medium substrate~~ according to ~~any one of~~ claim~~s 1 to 8~~ 2.

~~10~~19. A magnetic recording medium comprising a magnetic recording layer on the magnetic recording medium substrate according to claim ~~9~~18.

~~11. A glass spacer for a magnetic recording and reproducing apparatus, the glass spacer comprising an amorphous oxide glass,~~

~~wherein an SiO_2 content ranges from 56 mol% to 80 mol%;~~

~~an Li_2O content ranges from 1 mol% to 10 mol%;~~

~~a B_2O_3 content ranges from 0 mol% to 4 mol%;~~

~~a total content of MgO and CaO (MgO + CaO) ranges from 9 mol% to 40 mol%; and~~

~~the oxide glass has a specific gravity of 2.75 g/cm^3 or less, a glass transition temperature of 650°C or higher, and a Young's modulus of 90 GPa or more.~~

~~12. A glass spacer for a magnetic recording and reproducing apparatus, the glass spacer comprising an amorphous oxide glass,~~

~~wherein an SiO_2 content ranges from 56 mol% to 80 mol%;~~

~~an Li_2O content ranges from 1 mol% to 10 mol%;~~

~~a B_2O_3 content ranges from 0 mol% to 4 mol%;~~

~~a total content of MgO and CaO (MgO + CaO) ranges from 9 mol% to 40 mol%;~~

~~a mole ratio of a total content of SiO_2 and ZrO_2 relative to an Al_2O_3 content ($(SiO_2 + ZrO_2)/Al_2O_3$) ranges from 2 to 13; and~~

~~the oxide glass has a glass transition temperature of 650°C or higher,~~

~~and a Young's modulus of 90 GPa or more.~~

~~13. A magnetic recording and reproducing apparatus, comprising at least one of~~

~~the magnetic recording medium according to claim 10, and~~

~~the glass spacer for a magnetic recording and reproducing apparatus according to claim 11 or 12.~~

20. A magnetic recording and reproducing apparatus, comprising the magnetic recording medium according to claim 19.