CLAIMS

1. A pressure-sensitive adhesive layer comprising a first surface and a second surface on a side opposite to the first surface,

wherein the pressure-sensitive adhesive layer is a single layer,

the pressure-sensitive adhesive layer forming a base of a whole of the pressure-sensitive adhesive layer with a pressure-sensitive adhesive composition containing a base polymer,

the first surface has a first refractive index based on the pressure-sensitive adhesive composition, while a second refractive index of the second surface is lower than the first refractive index of the first surface, and

in the pressure-sensitive adhesive layer, on a side of the second surface, a low refractive index material having a lower refractive index than the refractive index of the base polymer is dispersed.

2. The pressure-sensitive adhesive layer according to claim 1, wherein a difference between the first refractive index of the first surface and the second refractive index of the second surface is 0.02 to 0.45.

3. The pressure-sensitive adhesive layer according to claim 1 or 2, wherein the second refractive index of the second surface is 1.45 or less.

4. The pressure-sensitive adhesive layer according to any one of claims 1 to 3, wherein a thickness of a region where the low refractive index material is dispersed is 600 nm or less in a thickness direction from the side of the second surface in the pressure-sensitive adhesive layer.

5. The pressure-sensitive adhesive layer according to any one of claims 1 to 4, wherein the base polymer has a refractive index of 1.40 to 1.55, and the low refractive material has a refractive index of 1.10 to 1.45.

6. The pressure-sensitive adhesive layer according to any one of claims 1 to 5, wherein a difference between the refractive index of the base polymer and the refractive index of the low refractive index material is 0.07 to 0.45.

7. The pressure-sensitive adhesive layer according to any one of claims 1 to 6, wherein the low refractive index material is particles having an average particle diameter of 10 nm to 150 nm.

8. The pressure-sensitive adhesive layer according to any one of claims 1 to 7, wherein the low refractive index material is at least one particle selected from a group consisting of at least one inorganic particle selected from a group consisting of MgF_2, CaF_2 and Na_3AlF_6, a porous silica particle, a hollow nanosilica particle, and a hollow polymer particle.

9. The pressure-sensitive adhesive layer according to any one of claims 1 to 8, wherein a total light transmittance is 85% or more.

10. The pressure-sensitive adhesive layer according to any one of claims 1 to 9, wherein the second surface has a reflectance of 0.5 to 3.5%.

11. The pressure-sensitive adhesive layer according to any one of claims 1 to 10, wherein a difference in reflectance between the first surface and the second surface is 0.1 to 3.5%.

12. The pressure-sensitive adhesive layer according to any one of claims 1 to 11, wherein a gel fraction is 30 to 95% by weight.

13. The pressure-sensitive adhesive layer according to any one of claims 1 to 12, wherein a storage elastic modulus G′ at 25°C is 0.05 to 0.50 MPa.

14. The pressure-sensitive adhesive layer according to any one of claims 1 to 13, wherein a tan δ peak value is -5 to -50°C when a dynamic viscoelasticity is measured at 1 Hz.

15. A method for producing the pressure-sensitive adhesive layer according to any one of claims 1 to 14, comprising:

a step (1) of forming a base pressure-sensitive adhesive layer on a support with a pressure-sensitive adhesive composition containing a base polymer;

a step (2) of providing a dispersion in which a low refractive index material having a lower refractive index than the refractive index of the base polymer is dispersed;

a step (3) of applying the dispersion to a second surface on a side opposite to a first surface on a side of the support in the base pressure-sensitive adhesive layer and penetrating the low refractive index material contained in the dispersion in a thickness direction from the second surface in the base pressure-sensitive adhesive layer; and

a step (4) of drying the pressure-sensitive adhesive layer into which the low refractive index material has penetrated.

16. A pressure-sensitive adhesive sheet comprising: the pressure-sensitive adhesive layer according to any one of claims 1 to 14; and a support on one surface or both surfaces of the pressure-sensitive adhesive layer.

17. A pressure-sensitive adhesive layer-attached optical film comprising:

an optical film; and a pressure-sensitive adhesive layer provided on one surface or both surfaces of the optical film,

wherein the pressure-sensitive adhesive layer on the one surface or the both surfaces is the pressure-sensitive adhesive layer according to any one of claims 1 to 14, and the optical film is attached to the first surface side of the pressure-sensitive adhesive layer.

18. The pressure-sensitive adhesive layer-attached optical film according to claim 17, wherein the optical film is a polarizing film.

19. An optical laminate comprising: the pressure-

sensitive adhesive layer-attached optical film according to claim 17 or 18; and a low-refractive-index optical member bonded to the pressure-sensitive adhesive layer of the pressure-sensitive adhesive layer-attached optical film.

20. An image display device comprising the pressure-sensitive adhesive layer according to any one of claims 1 to 14, the pressure-sensitive adhesive layer-attached optical film according to claim 17 or 18, or the optical laminate according to claim 19.