polyurethane resin adhesive layer and the characteristic of the obtained optical article. As a result, (1) in case the photochromic polyurethane-urea resin adhesive layer is formed by using the polyurethane-urea resin, the obtained laminated article has excellent adhesion, the heat resistance, the photochromic property and the durability or so; also (2) in case of forming the above mentioned photochromic polyurethane-urea resin adhesive layer without using the solvent, or by drying after forming the cast membrane using the solvent (removal of the solvent), and to produce the laminated article using the photochromic adhesive sheet (the photochromic polyurethane-urea resin adhesive layer) comprising the polyurethane-urea resin and the photochromic compound dispersed therein, the present inventors have found that the bad influence caused by the solvent can be avoided and the photochromic property does not decline, thereby the present invention was accomplished.

[0011]

That is, the present invention is the photochromic composition comprising (A) polyurethane-urea resin having the urea bond in the molecular chain, and (B) photochromic compound.

[0011a] In one aspect, there is provided a photochromic composition comprising (A) a polyurethane-urea resin having an urea bond in the molecular chain, (B) a photochromic compound, and (D) an isocyanate compound having at least one isocyanate group in the molecule.

[0011b] In another aspect, there is provided an optical article having a multilayer structure wherein two optical sheets or films facing each other are bound via an adhesive layer comprising the photochromic composition as defined herein.

[0011c] In another aspect, there is provided an optical article having a multilayer structure wherein two optical sheets or films facing each other are bound via a first adhesive layer comprising the photochromic composition as defined herein, and a second adhesive layer present at both sides of said first adhesive layer.

[0011d] In another aspect, there is provided a production method of the optical article as defined herein, comprising a step (I) of forming a photochromic adhesive sheet comprising (A) the polyurethane-urea resin and (B) the photochromic compound dispersed in (A) the polyurethane-urea resin, by extending the photochromic composition comprising (A) the polyurethane-urea resin having the urea bond in the molecular chain, (B) the photochromic compound, (D) the isocyanate compound comprising at least one isocyanate group in the molecule and (C) the organic solvent of 5 to 900 parts by weight with respect to 100 parts by weight of (A) the polyurethane-urea resin on a flat and smooth base material, then removing (C) the organic solvent by drying and separating the base material; and a step (II) of forming said multilayer structure by binding two optical sheets or films by placing said photochromic adhesive sheet in between two optical sheets or films facing each other.

EFFECTS OF THE INVENTION

[0012]

The photochromic composition of the present invention functions as the adhesive agent or the binder, and when the laminated article binding the optical sheets or films formed of polycarbonate resin or so by using the adhesive layer formed of said composition, the obtained laminated article shows excellent adhesion and photochromic characteristic. Further, as the above mentioned adhesive layer shows excellent heat resistance, even when the optical article is produced by installing the above mentioned laminated article into the metal mold and injection molding the thermoplastic resin such as polycarbonate resin or so in the metal mold, the adhesion and the photochromic