or from the viewpoint of designability for providing a mat-toned and gentle texture imparting a high-class feeling.

[Citation List]

[Patent Literature]

[0006]

[Patent Literature 1] Japanese Patent Laid-Open No. 6-057007

[Patent Literature 2] Japanese Patent Laid-Open No. 7-314519

[Patent Literature 3] Japanese Patent Laid-Open No. 2002-220562

[Patent Literature 4] Japanese Patent Laid-Open No. 2003-020384

[Summary]

[Technical Problem]

[0007]

A sensing technology using the above-mentioned optical sensor causes halation, lens flare, ghost, and/or the like to occur to result in remarkable degradation of an image taken or remarkable deterioration in detection accuracy of sensing, when light (unnecessary light) reflected on the surface of any interior part is incident into such an optical sensor. On the contrary, the techniques of Patent Literatures 1 to 4 are each merely a

(product name: Carbonfeather X6B manufactured by KIMOTO) as a commercially available product exhibits a surface reflectance and surface gloss values, as follows. Accordingly, in a case where such a resin material of the prior art is used in an application of an optical sensing kit, the influence of reflected light at a wide angle still highly remains and thus imaging, sensing, and the like are difficult to perform at higher accuracies.

[Table 1]

Specular gloss value (%)	20°	0.2
	45°	2.0
	60°	3.4
	75°	14.1
	85°	25.7
	Total	45.2
Regular reflectance (%) at 70 degrees (550 nm)		2.8

[0009]

The present disclosure has been made in view of the above problems. In other words, an object of the present disclosure is to provide, for example, a novel low reflective film small in surface reflectance and surface gloss values in a wide angle region, and an optical sensing kit using the low reflective film, as well as a low reflective molded product.

[Solution to Problem]

[0010]

The present inventors have made intensive studies about surface optical characteristics of a low reflective

film suitable for imaging, sensing, and the like at higher accuracies in order to solve the above problems, and as a result, have newly found a low reflective film and a low reflective molded product which are each small in surface reflectance and surface gloss value in a wide angle region, leading to completion of the present disclosure.

[0011]

That is, the present disclosure provides various specific aspects represented below.

[1] In an aspect, there is provided a low reflective film including at least a first resin layer, wherein the first resin layer includes at least a binder resin, and an organic resin particle having an average particle size D_{50} of 2 to 20 μm, and a surface of the first resin layer has a reflectance and gloss values satisfying the following relationships:

(1) regular reflectance at 70 degrees: 0.0% or more and 2.5% or less (wavelength 550 nm)

(2) specular gloss value at 60 degrees: 0.0% or more and 6.0% or less

specular gloss value at 75 degrees: 0.0% or more and 6.0% or less

specular gloss value at 85 degrees: 0.0% or more and 6.0% or less, and

(3) a sum of a specular gloss value at 20°, a specular gloss value at 45°, the specular gloss value at

least the first resin layer and a substrate film in the listed order.

[9] The low reflective film according to any one of [1] to [8], having a laminated structure comprising at least the first resin layer, a substrate film, and a pressure-sensitive adhesive layer in the listed order.

[10] The low reflective film according to any one of [1] to [9], having a laminated structure comprising at least the first resin layer, a substrate film, a second resin layer, and a pressure-sensitive adhesive layer in the listed order.

[11] The low reflective film according to any one of [7] to [10], wherein the pressure-sensitive adhesive layer comprises one or more pressure-sensitive adhesives selected from the group consisting of a rubber-based pressure-sensitive adhesive, an acrylic pressure-sensitive adhesive, an olefin-based pressure-sensitive adhesive, a silicone-based pressure-sensitive adhesive, and a urethane-based pressure-sensitive adhesive.

[12] The low reflective film according to any one of [1] to [11], wherein the first resin layer has a surface roughness Ra of 0.8 to 4.0 μm.

[0014]

[13] In another aspect, there is provided an optical sensing kit including at least an optical sensor which is disposed in an inside of a room of a moving vehicle and which images an outside of the room of the moving vehicle or detects visible light or

[14] The optical sensing kit according to [13], wherein the organic resin particle has an average particle size D_{50} of 5 to 20 μm.

[15] The optical sensing kit according to [13] or [14], wherein the interior part corresponds to one or more selected from the group consisting of a resin molded product, a multi-layered laminated product using the resin molded product, a non-woven fabric, and a skin material.

The reflective film for use in the optical sensing kit according to [13] or [14] preferably further has any one or more technical features of [3] to [12].

[0015]

[16] In another aspect, there is provided a low reflective molded product which covers a surface of an article, wherein the low reflective molded product includes at least a binder resin, and an organic resin particle having an average particle size D_{50} of 2 to 20 μm, and at least one surface of the low reflective molded product has a reflectance and gloss values satisfying the following relationships:

(1) regular reflectance at 70 degrees: 0.0% or more and 2.5% or less (wavelength 550 nm)

(2) specular gloss value at 60 degrees: 0.0% or more and 6.0% or less

specular gloss value at 75 degrees: 0.0% or more and 6.0% or less

specular gloss value at 85 degrees: 0.0% or more and 6.0% or less, and

(3) a sum of a specular gloss value at 20°, a specular gloss value at 45°, the specular gloss value at 60°, the specular gloss value at 75°, and the specular gloss value at 85° is 7.5% or less.

The low reflective molded product according to [16] preferably further has any one or more technical features of [3] to [12]. It is to be noted that the first resin layer is to be read as the first resin layer and the low reflective film is to be read as the low reflective molded product.

[Advantageous Effects]

[0016]

According to the present disclosure, there can be realized a low reflective film and a low reflective molded product which are each small in surface reflectance and surface gloss value in a wide angle region, and there can be provided a new material which has not been conventionally present. Such a low reflective film or low reflective molded product can be then used to thereby realize, for example, a matted product small in surface gloss value even at a wide angle, and such a low reflective film can be used as a skin film for interior parts, in an application of an optical sensing kit, to thereby inhibit an optical sensor from

causing a degraded image taken or a deteriorated detection accuracy. According to the present disclosure, not only a new material excellent in low reflectivity in a wide angle region can be realized, but also imaging, sensing, and the like at high accuracies can be realized in various moving vehicles such as an automobile, a railway train, a train, an electric train, a ship, a cargo ship, an aircraft, a spacecraft, a rocket, transport equipment, and a vehicle.

[Brief Description of Drawings]

[0017]

[Figure 1] A schematic cross-sectional view illustrating a low reflective film 100 of one embodiment.

[Figure 2] A schematic cross-sectional view illustrating a low reflective film 200 of Modified Example.

[Figure 3] A schematic cross-sectional view illustrating a low reflective film 300 of Modified Example.

[Figure 4] A schematic cross-sectional view illustrating a low reflective film 400 of Modified Example.

[Description of Embodiments]

[0018]