11 parallel lines (ferromagnetic material areas 4a of magnetic member 4 shown in Figures 7(a) and 7(b)) are used as a pattern formed on the designable medium 5 (pattern of magnetic member 4). The pattern is, however, not limited to the pattern described above and can be a curved line, a circle, an ellipse, an oval, a polygon, a character, a symbol, or a combination thereof. The magnetic fluxes produced when a magnetic field is applied change in accordance with the pattern, and the orientation of the luster pigments changes accordingly. Using a variety of patterns for specific purposes achieves desired pigment orientation.

[0067]

<Effect and advantage of designable medium 5 according to present embodiment>

As described above, in the designable medium 5 according to the present embodiment, a magnetic field is applied to the designable medium 5 in which the coated film 5a is formed on the substrate 5b with the magnetic member 4 made of a ferromagnetic material or paint containing a ferromagnetic material adjacent to the designable medium 5 as shown in Figure 7(a) to orient the luster pigments 6a and 6b contained in the coated film 5a. In this case, pigment orientation is performed differently in the portion of the coated film 5a to which the magnetic member 4 is adjacent and in the portion of the coated film 5a to which no magnetic member 4 is adjacent, whereby a predetermined pattern is formed in each portion of the coated film 5a. As a result, the contrast and the color tone provided by a portion of the coated film 5a can be different from those provided by another portion of the coated film 5a.

EXAMPLES

[0068]

Examples of the embodiments described above will next be described. It is, however, noted that ~~the following Examples are those based on the technical spirit of the present invention and that~~ the present invention is not limited to the following Examples.

[0069]

(Example 1)

<Exemplary method 1 for manufacturing designable medium 5>

First, two types of luster pigment (Iriodin522 and XirallicT60-24) were added to a no-solvent, low-viscosity curable resin (UV Flexographic ink (manufactured by T&K TOKA Corporation, viscosity: 170 mPa·s)) to produce coat by using an ink agitator (manufactured by KURABO Industries Ltd., model: KK-100).

[0070]

Iriodin522 was used as the luster pigment 6b having negative (-) anisotropic magnetic susceptibility, and XirallicT60-24 was used as the luster pigment 6a having positive (+)

anisotropic magnetic susceptibility and the luster pigment (XirallicT60-24) 6a having positive (+) anisotropic magnetic susceptibility was within the range of Iriodin522 : XirallicT60-24 = 1:5 to 1:8, the designable media produced with application of a magnetic field did not show a large difference in color tone between two colors (almost green) because the luster pigment (XirallicT60-24) 6a having positive (+) anisotropic magnetic susceptibility was dominant, and comparison between a designable medium produced with application of no magnetic field (green) and a designable medium produced with application of a magnetic field (almost green) did not allow the inspector to perceive a difference in color change (×).

[0098]

The measurement results shown in Figure 11 therefore show that when two types of luster pigment are used to manufacture the designable medium 5, the mixture ratio between the luster pigment (Iriodin522) 6a having negative (-) anisotropic magnetic susceptibility and the luster pigment (XirallicT60-24) 6a having positive (+) anisotropic magnetic susceptibility is preferably within the range of Iriodin522 : XirallicT60-24 = 1:02 to 1:4, more preferably within the range of Iriodin522 : XirallicT60-24 = 1:05 to 1:2.3. In this case, each of the resultant designable media 5 provided different color tones when viewed at different angles, and the single coated film 5a provided a plurality of color tones.

~~[0099]~~

~~The embodiments described above are preferred embodiments of the present invention, and the scope of the present invention is not limited only to the embodiments described above. Those skilled in the art can modify and replace the embodiments described above and make a variety of changes thereto to the extent that the modification, replacement, and changes do not depart from the substance of the present invention.~~

[0100]

For example, in Examples described above, Iriodin522 was used as the luster pigment 6b having negative (-) anisotropic magnetic susceptibility, and XirallicT60-24 was used as the luster pigment 6a having positive (+) anisotropic magnetic susceptibility. The designable medium 5 was then placed in a magnetic field generator installed horizontally, such as that shown in Figure 5, and a magnetic field (lateral magnetic field, horizontal magnetic field) of 0.5 T was applied to the designable medium 5 to orient the two types of luster pigment. In this case, the measurement results shown in Figures 10 and 11 were obtained. Even when the material used as the luster pigment 6b having negative (-) anisotropic magnetic susceptibility and the material used as the luster pigment 6a having positive (+) anisotropic magnetic susceptibility are changed as appropriate, values within a range substantially the same as the measurement results shown in Figures 10 and 11 are optimum values although

CLAIMS

[Claim 1]

A method for manufacturing a designable medium characterized in that the method comprises:

an application step of applying coat in which ~~at least~~ two types of luster pigment to be oriented in different directions in a magnetic field are diffused in a resin to a substrate to form a coated film, wherein the concentration of the luster pigments ranges from 3.0% to 14.0%;

an orientation step of applying a magnetic field to a medium in which the coated film is formed on the substrate to orient the luster pigments contained in the coated film; and

a cure step of curing the coated film.

[Claim 2]

The method for manufacturing a designable medium according to claim 1, characterized in that

the application step is a step of applying coat in which the following ~~at least~~ two types of luster pigment are diffused in the resin to the substrate: a first luster pigment to be oriented in a magnetic field in a direction substantially perpendicular to magnetic fluxes; and a second luster pigment to be oriented in the magnetic field in a direction substantially parallel to the magnetic fluxes.

[Claim 3]

The method for manufacturing a designable medium according to claim 1 or 2, characterized in that the cure step is a step of curing the coated film with the magnetic field applied.

[Claim 4]

The method for manufacturing a designable medium according to any one of claims 1 to 3, characterized in that the orientation step is a step of applying a magnetic field to the medium with a magnetic member made of a ferromagnetic material or a paint containing a ferromagnetic material adjacent to the substrate to orient the luster pigments.

[Claim 5]

A designable medium comprising: a substrate; and a coated film in which ~~at least~~ two types of luster pigment to be oriented in different directions in a magnetic field are diffused in

a resin, wherein the concentration of the luster pigments ranges from 3.0% to 14.0%, the substrate and the coated film being layered on each other, the designable medium characterized in that

the coated film includes the following ~~at least~~ two types of luster pigment: a luster pigment oriented in substantially the same direction as the direction in which the coated film is layered on the substrate; and a luster pigment oriented in a direction substantially perpendicular to the layered direction.

[Claim 6]

The designable medium according to claim 5, characterized in that the ~~at least~~ two types of luster pigment are a luster pigment to be oriented in a magnetic field in a direction substantially perpendicular to magnetic fluxes and a luster pigment to be oriented in the magnetic field in a direction substantially parallel to the magnetic fluxes.