[NAME OF DOCUMENT] CLAIMS

[Claim 1]

An ink composition for screen printing to be used onto a thermoplastic resin substrate that can produce printed matter comprising both a solid image pattern and a fine image pattern with the spreading width of no more than 10 μm from the image design dimensions of the printing plate at the edges or outlines of any section in the printed image, when producing printed matter by screen printing onto a thermoplastic resin substrate using a 360-mesh screen printing plate formed by a high-strength, non-deforming stainless steel mesh with a filament diameter of 25 μm,

Wherein the measured flow radius value of the ink composition is 13.0 to 24.0 mm after 1 minute from the start of measurement by a flow property measuring method using a spread meter at 25°C according to JIS K5701-1:2000,

the inequality "F60" - "F45" ≦ 1.0 mm is satisfied, wherein "F60" is defined as the measured flow radius value after 1 minute and "F45" is defined as the measured flow radius value after 45 seconds from the start of measurement by the flow property measuring method using the spread meter,

the viscosity is 5 to 180 Pa·s as measured with a BH-type rotating viscosimeter at 25°C,

the thixotropic index (TI value) is 2.0 to 8.0,

the composition contains a solvent with a boiling point of not less than 170°C at not less than 70 mass% of the total solvent and

a thermoplastic polymer with a weight-average molecular weight of not less than 4000 and with a Tg (softening point) of 20 to 95°C at not less than 10 mass% with respect to the total ink composition, and that can produce printed matter,

wherein the printed image coating film has an elongation percentage of not less than 250% under vacuum forming or pressure forming.

[Claim 2]

The ink composition for screen printing according to Claim 1, wherein the solvent with a boiling point of not less than 170°C includes isophorone and/or a dialkyl adipate ester.

[Claim 3]

The ink composition for screen printing according to Claim 1 or 2, wherein the weight-averaged Tg is 45 to 90°C, when the Tg of a single or of multiple thermoplastic polymers present in the ink composition for screen printing is weight-averaged.

[Claim 4]

The ink composition for screen printing according to any one of Claims 1 to 3, wherein the thermoplastic polymer is a

polyester resin.

[Claim 5]

The ink composition for screen printing according to any one of Claims 1 to 4, wherein the ink composition contains at least one coloring material, extender pigment or filler, or a combination thereof, the coloring material, extender pigment and filler are dispersed in the ink composition with a mean particle size of no greater than 35 μm.

[Claim 6]

The ink composition for screen printing according to any one of Claims 1 to 5, wherein the ink composition is an ink composition for graphic decorative screen printing.

[Claim 7]

The ink composition for screen printing according to any one of Claims 1 to 5, wherein the ink composition is an ink composition for screen printing to be used for black matrix, black stripe, resist pattern, spacer or light guiding panel dot formation.

[Claim 8]

Printed matter formed by screen printing onto a thermoplastic resin substrate using the screen printing ink composition according to any one of Claims 1 to 7.

[Claim 9]

A method for producing printed matter, wherein printed matter is produced by the screen printing ink composition for screen printing onto a thermoplastic resin substrate according to any one of Claims 1 to 7.

CLAIMS

[Claim 1]

An ink composition for screen printing to be used onto a thermoplastic resin substrate that can produce printed matter comprising both a solid image pattern and a fine image pattern with the spreading width of no more than 10 μm from the image design dimensions of the printing plate at the edges or outlines of any section in the printed image, when producing printed matter by screen printing onto a thermoplastic resin substrate using a 360-mesh screen printing plate formed by a high-strength, non-deforming stainless steel mesh with a filament diameter of 25 μm,

wherein the measured flow radius value of the ink composition is 13.0 to 24.0 mm after 1 minute from the start of measurement by a flow property measuring method using a spread meter at 25°C according to JIS K5701-1:2000,

the inequality "F60" - "F45" ≦ 1.0 mm is satisfied, wherein "F60" is defined as the measured flow radius value after 1 minute and "F45" is defined as the measured flow radius value after 45 seconds from the start of measurement by the flow property measuring method using the spread meter,

the viscosity is 5 to 180 Pa·s as measured with a BH-type rotating viscosimeter at 25°C,

the thixotropic index (TI value) is 2.0 to 8.0,

the composition contains a solvent, which is selected from one or two more of solvent among a mixed solvent of butylcellosolve acetate and dialkyl adipate ester, isophorone, 3-methoxy-3-methylbutanol, 3-methoxy-3-methylbutyl acetate, coal tar naphtha with a boiling point of not less than 170°C, diethyleneglycol monoethyl ether, diethyleneglycol monoethyl ether acetate, diethyleneglycol monobutyl ether, triethyleneglycol monobutyl ether, triethyleneglycol monobutyl ether acetate, a (meth)acrylate monomer, vinyl ether monomer or amide monomer, with a boiling point of not less than 170°C at not less than 70 mass% of the total solvent and

a thermoplastic polymer with a weight-average molecular weight of not less than 4000 and with a Tg (softening point) of 20 to 95°C at not less than 10 mass% with respect to the total ink composition, and that can produce printed matter,

wherein the printed image coating film has an elongation percentage of not less than 250% under vacuum forming or pressure forming.

[Claim 2]

The ink composition for screen printing according to Claim 1, wherein the weight-averaged Tg is 45 to 90°C, when the Tg of a single or of multiple thermoplastic polymers present

in the ink composition for screen printing is weight-averaged.

[Claim 3]

The ink composition for screen printing according to Claims 1 or 2, wherein the thermoplastic polymer is a polyester resin.

[Claim 4]

The ink composition for screen printing according to any one of Claims 1 to 3, wherein the ink composition contains at least one coloring material, extender pigment or filler, or a combination thereof, the coloring material, extender pigment and filler are dispersed in the ink composition with a mean particle size of no greater than 35 μm.

[Claim 5]

The ink composition for screen printing according to any one of Claims 1 to 4, wherein the ink composition is an ink composition for graphic decorative screen printing.

[Claim 6]

The ink composition for screen printing according to any one of Claims 1 to 4, wherein the ink composition is an ink composition for screen printing to be used for black matrix, black stripe, resist pattern, spacer or light guiding panel dot formation.

[Claim 7]

Printed matter having ink layer of the screen printing ink composition according to any one of Claims 1 to 6.

[Claim 8]

A method for producing printed matter, wherein printed matter is produced by the screen printing ink composition for screen printing onto a thermoplastic resin substrate according to any one of Claims 1 to 6.