

DESCRIPTION

Title of Invention

FOOD PACKAGING FILM, AND GIFT-BOXED SMALL ROLL OF
FOOD PACKAGING FILM

5 Technical Field

[0001] The present invention relates to a food wrapping film and an
article that is a food wrapping rolled film with a box.

Background Art

10 [0002] Conventionally, food wrapping films have been widely used
commercially in hotels, restaurants, and other such establishments, as
well as in the home, during food storage, preparation, and the like. In
recent years, a food wrapping film having a thermoplastic resin as a
main component and further containing a colorant, such as a copper
15 phthalocyanine colorant, has been proposed to make it easier to see
visually whether a piece of the film has become mixed in the food
(Patent Literature 1).

Citation List

Patent Literature

20 [0003] [Patent Literature 1] Japanese Unexamined Patent Publication
No. 2015-7198

Summary of Invention

Technical Problem

25 [0004] However, from studies made by the inventors, it has been found
that a film such as that disclosed in Patent Literature 1 may be
weakened or its stretchability decreased due to the addition of a coloring
agent.

[0005] It is an object of the present invention to provide a food wrapping film that is excellent in strength and stretchability, and to provide an article that is a food wrapping rolled film with a box.

Solution to Problem

5 [0006] The present invention provides a food wrapping film containing a thermoplastic resin and a blue colorant, and having a tensile modulus of 110 to 180 MPa and a load when cutting the film of 80 to 150 cN.

[0007] The thermoplastic resin may be at least one selected from the group consisting of polyvinyl chloride resins, polyvinylidene chloride
10 resins, polyolefin resins, polystyrene resins, polyester resins and polyamide resins.

[0008] The film may contain, as the thermoplastic resin, 70% by mass or more based on the total amount of the film of at least one resin selected from the group consisting of polyvinyl chloride resins,
15 polyvinylidene chloride resins and polyolefin resins.

[0009] The present invention also provides an article including the food wrapping film, a core material on which the food wrapping film is rolled, and a box in which the food wrapping film and the core material are stored, wherein the box is provided with a blade part for cutting the
20 food wrapping film.

Advantageous Effects of Invention

[0010] According to the present invention, it is possible to provide a food wrapping film that is excellent in strength and stretchability, and to provide an article that is a food wrapping rolled film with a box.

Brief Description of Drawings

25 [0011] FIG. 1 is a schematic view for describing the method for

measuring the load when cutting the film.

FIG. 2 is a schematic view showing a food wrapping rolled film with a box.

Description of Embodiments

[0012] The film according to this embodiment contains a thermoplastic resin and a blue colorant, and has a tensile modulus of 110 to 180 MPa and a load when cutting the film of 80 to 150 cN. The film according to this embodiment is suitably used as a food wrapping film.

[0013] The thermoplastic resin may be a polyvinyl chloride resin such as polyvinyl chloride; a polyvinylidene chloride resin such as polyvinylidene chloride; a polyolefin resin such as polyethylene, polypropylene or saponified ethylene-vinyl acetate copolymer; a polystyrene resin such as butadiene-styrene copolymer, acrylonitrile-styrene copolymer, polystyrene, styrene-butadiene-styrene copolymer, styrene-isoprene-styrene copolymer or styrene-acrylic acid copolymer; a polyester resin such as polyethylene terephthalate, polyethylene naphthalate or polybutylene terephthalate; a polyamide resin such as 6-nylon, 6,6-nylon or 12-nylon; or the like. The thermoplastic resin is preferably a polyvinyl chloride resin, a polyvinylidene chloride resin or a polyolefin resin, and more preferably a polyvinyl chloride resin, a polyvinylidene chloride resin or a polyethylene resin, from the viewpoint of excellent handling property.

[0014] As the polyvinyl chloride resin, a polyvinyl chloride resin having an average degree of polymerization of 700 to 1300 is preferable from the viewpoint of excellent moldability, heat resistance and fluidity of the film. The average polymerization degree in the present

specification means an average degree of polymerization measured according to JIS K6720-2.

[0015] The polyvinyl chloride resin may be a vinyl chloride homopolymer (polyvinyl chloride resin) from the viewpoint of excellent mechanical properties, or the polyvinyl chloride resin may be a copolymer of a vinyl chloride and other monomer copolymerizable therewith, for the purpose of imparting other properties. The copolymer may be a graft copolymer, a block copolymer or a random copolymer. Examples of the other monomer include olefins such as ethylene, propylene and polybutene; vinyl esters of saturated acids such as vinyl acetate and vinyl laurate; alkyl esters of unsaturated acids such as methyl acrylate and methyl methacrylate; alkyl vinyl ethers such as lauryl vinyl ether; maleic acid, acrylonitrile, styrene, methylstyrene, vinylidene fluoride; and the like. When the polyvinyl chloride resin is a copolymer, the content of the vinyl chloride unit in the copolymer may be 10% by mass or more based on the total amount of monomer units, and is preferably 30% by mass or more and more preferably 50% by mass or more, from the viewpoint of excellent mechanical properties. The upper limit of the content of the vinyl chloride unit in the copolymer is not particularly limited, and may be, for example, 99% by mass or less based on the total amount of monomer units.

[0016] The polyvinyl chloride resin may be, for example, a polymer blend with a three-dimensional polymer of acrylonitrile-butadiene-styrene or the like, a post-treatment product with an alcohol or the like, or a post-treatment product with a chlorine-containing compound. In these cases, the content of the vinyl chloride unit in the polyvinyl

chloride resin may be 10% by mass or more based on the total amount of the resin.

[0017] The polyvinylidene chloride resin may be a vinylidene chloride homopolymer (polyvinylidene chloride resin), for example, may be a copolymer containing vinylidene chloride and other monomer copolymerizable with vinylidene chloride as monomer units. The other monomer may be vinyl chloride, an acrylate ester of acrylic acid and an alcohol having 1 to 8 carbon atoms, a methacrylic acid ester of methacrylic acid and an alcohol having 1 to 8 carbon atoms, a vinyl ester of an aliphatic carboxylic acid, an unsaturated aliphatic carboxylic acid, an olefin, a vinyl ether, or the like. The copolymer of vinylidene chloride and vinyl chloride shall belong to the polyvinylidene chloride resin.

[0018] The content of the vinylidene chloride unit in the polyvinylidene chloride resin may be, for example, 60% by mass or more, 70% by mass or more, or 80% by mass or more, based on the total amount of monomer units, from the viewpoint of moldability and heat resistance of the film. The upper limit of the content of the vinylidene chloride unit in the polyvinylidene chloride resin is not particularly limited, and may be, for example, 99% by mass or less based on the total amount of monomer units. The content of the vinylidene chloride unit can be measured by a nuclear magnetic resonance (NMR) apparatus.

[0019] The weight average molecular weight of the polyvinylidene chloride resin may be, for example, 40,000 to 180,000, 60,000 to 160,000, or 80,000 to 140,000. The weight average molecular weight of the polyvinylidene chloride resin can be measured by GPC method

using polystyrene of known molecular weight as a standard substance.

[0020] The conditions of the GPC method used for measuring the weight average molecular weight of the polyvinylidene chloride resin are as follows. A gel chromatograph Alliance GPC 2000 model
5 manufactured by Waters Corporation is used as a measuring device. A solution prepared by dissolving a polyvinylidene chloride resin in tetrahydrofuran so as to be 0.5% by weight is used as a sample.

Column: TSKgel GMHHR-H(S) HT 30 cm × 2, TSKgel
GMH6-HTL 30 cm × 2 manufactured by Tosoh Corporation

10 Mobile phase: Tetrahydrofuran

Detector: Differential refractometer

Flow rate: 1.0 mL/min

Column temperature: 20°C

Injection amount: 500 µL

15 [0021] When the thermoplastic resin is a polyvinyl chloride resin or a polyvinylidene chloride resin, the film may further contain a plasticizer. Examples of the plasticizer include epoxidized oils such as epoxidized linseed oil, epoxidized soybean oil and epoxidized fatty acid alkyl ester, adipic acid esters having a linear or branched alkyl group having 6 to 10
20 carbon atoms, hydroxy polycarboxylic acid esters such as tributyl acetylcitrate and triethyl acetylate, fatty acid group dibasic acid esters such as di-normal butyl sebacate, glycol esters such as pentaerythritol ester and diethylene glycol benzoate, phosphate esters such as triphenyl phosphate and tricresyl phosphate, glycerin diacetomonomonolaurate,
25 chlorinated paraffin, polyester plasticizers, and the like. These plasticizers are used singly or in combination of two or more. The

content of the plasticizer is appropriately adjusted within the range of, for example, 20 to 50 parts by mass, based on 100 parts by mass of the polyvinyl chloride resin, depending on application such as the type of food to be wrapped, wrapping form, and wrapping method.

[0022] Examples of the polyolefin resin include polyethylene resins and the like, and the polyethylene resin may be a copolymer using low density polyethylene, linear low density polyethylene, linear ultra low density polyethylene, medium density polyethylene, high density polyethylene, ethylene or the like, as monomer units. Specifically, the polyethylene resin is a copolymer of ethylene and one or more selected from α -olefins having 3 to 10 carbon atoms, such as propylene, 1-butene, 1-pentene, 1-hexene, 4-methyl-1-pentene, 1-heptene and 1-octene, vinyl esters such as vinyl acetate and vinyl propionate, unsaturated carboxylic acid esters such as methyl acrylate, ethyl acrylate, methyl methacrylate and ethyl methacrylate, unsaturated compounds such as conjugated diene and non-conjugated diene; and the like. The content of the ethylene unit in the polyethylene resin may be 50% by mass or more based on the total amount of monomer units.

[0023] The content of the thermoplastic resin may be 70% by mass or more or 75% by mass or more, and may be 85% by mass or less or 80% by mass or less, based on the total amount of the film, from the viewpoint of excellent productivity. The content of the polyvinyl chloride resin, the polyvinylidene chloride resin or the polyolefin resin is preferably within the above range, and the content of the polyvinyl chloride resin, the polyvinylidene chloride resin or the polyethylene resin is more preferably within the above range.

[0024] The blue colorant is, for example, a colorant having a maximum absorption wavelength in the visible light region (380 to 750 nm) of 600 to 750 nm. The absorbance at the maximum absorption wavelength in the visible light region of the blue colorant is preferably at least 2 times and more preferably at least 3 times the absorbance at 470 nm.

Specifically, the blue colorant may be copper phthalocyanine (copper phthalocyanine blue), iron(III) hexacyanoferrate(II), cobalt·oxide-aluminum oxide mixture, indigo, ultramarine, or the like.

[0025] The content of the blue colorant may be 0.5% by mass or more, and 2.0% by mass or less, based on the total amount of the film.

[0026] In addition to the thermoplastic resin and the blue colorant, the film may further contain other components. Examples of the other components include an anti-fogging agent, a heat stabilizer, a light stabilizer, a lubricant, a filler, a plate-out preventing agent, an antioxidant, a releasing agent, a viscosity reducing agent, a surfactant, a colorant other than the blue colorant, a fluorescent agent, a surface treatment agent, a crosslinking agent, a processing aid, a pressure sensitive adhesive, an antistatic agent, an ultraviolet absorber, an anti-blocking agent, and the like.

[0027] The film may consist of a single layer containing the thermoplastic resin and the blue colorant, or may consist of a plurality of layers. When the film consists of a plurality of layers, the film may include, for example, a first surface layer, an intermediate layer and a second surface layer in this order. In this case, for example, the intermediate layer may contain the blue colorant. The film may further include, for example, an adhesive layer containing an acid-modified

polyolefin resin or the like in order to improve the adhesion between layers, and a heat resistant layer containing a polyamide resin may be further provided in order to improve the heat resistance of the film.

When the thermoplastic resin is a polyvinyl chloride resin, the film preferably consists of a single layer containing the thermoplastic resin (polyvinyl chloride resin) and the blue colorant.

[0028] The thickness of the film may be preferably 5 μm or more and more preferably 6 μm or more, from the viewpoint of efficiently shielding the food from the outside air, and may be preferably 25 μm or less and more preferably 12 μm or less, from the viewpoint of excellent handling property.

[0029] The film has a tensile modulus of 110 to 180 MPa from the viewpoint of excellent strength and stretchability, and preferably 110 to 170 MPa, 110 to 160 MPa, 120 to 180 MPa, 120 to 170 MPa, 120 to 160 MPa, 130 to 180 MPa, 130 to 170 MPa, or 130 to 160 MPa.

[0030] The tensile modulus of the film conforms to JIS K7161 (ISO 527-1) and JIS K7127 (ISO 527-3) and is the tensile modulus obtained by preparing a 10 mm width sample by cutting the film into a piece with a width of 40 mm and a length of 150 mm or longer and folding the piece into four in the width direction and measuring the sample using a tensile testing machine (for example, E3-L) manufactured by Toyo Seiki Seisaku-sho, Ltd.

[0031] The film has a load when cutting the film of 80 to 150 cN from the viewpoint of excellent strength and stretchability, and preferably 80 to 130 cN, 80 to 100 cN, 90 to 150 cN, 90 to 130 cN, or 90 to 100 cN.

[0032] A method for measuring the load when cutting the film will now

be described. FIG. 1 is a schematic view for describing the method for measuring the load when cutting the film. A film 2 having a width of 30 cm and a length of 100 m that is accommodated in a rectangular parallelepiped box 1 (with a length in the longitudinal direction of 31 cm, a length in the lateral direction of 4.7 cm, and a height of 4.7 cm) by being wound around a paper tube with an inner diameter of 27 mm and an outer diameter of 31 mm is pulled out from the box for a length of 30 cm. A push-pull gauge 3 (for example, manufactured by Aikoh Engineering Co., Ltd.) is then attached to a center 2a of the tip of the pulled-out film 2. The film 2 is pulled such that a blade direction of a metal saw blade 4 provided on the box 1 forms an angle of 45° with a pulling direction of the film 2, and the load when the film 2 is cut in this manner is measured as the load when cutting the film.

[0033] The tensile modulus of the film and the load when cutting the film fall within the above range by adjusting, for example, the content of the plasticizer (e.g., about 18 to 24 mass%) and the content of the blue colorant (about 0.5 to 2.0 mass%).

[0034] The film is produced by mixing a composition containing a thermoplastic resin and a blue colorant with a mixer such as a V-type blender, a ribbon blender, a Henschel mixer or a super mixer, and further kneading the mixture with a mixing roll, a Banbury mixer or a kneading machine such as a kneader, as necessary, to obtain a composition, followed by extrusion molding, for example.

Specifically, the composition is supplied to a hopper of an extruder, and a targeted film is obtained by an inflation method, a T-die method, or the like. Generally, the film is wound while the film is being produced,

and the wound film is further rewound (rolled) for each desired length such as 20 m or 50 m, packed in a box (decorative box), thereby forming a product. That is, the film in this embodiment may be in the form of a food wrapping rolled film or in the form of a food wrapping rolled film with a box.

[0035] Specifically, as shown in FIG. 2, an article (a food wrapping rolled film) 11 with a box includes a food wrapping film 12, a core material 13 on which the food wrapping film 12 is rolled, and a box 14 in which the food wrapping film 12 and the core material 13 are stored, and the box 14 may be provided with a blade part 15 for cutting the food wrapping film 12. The material of the core material 13 and the box 14 is not particularly limited. From the viewpoint of easily recognizing the color of the film 12 from the outside, at least a part of the box 14 is preferably transparent, or has a hole in such a degree as not to impair the function as a box.

[0036] When the film is composed of a plurality of layers, the film can be obtained by putting the constituent raw materials of each layer into separate extruders, melt-extruding them, co-extruding each layer by inflation, T-die method or the like and laminating them. In this case, it is preferable to form the film by directly drawing the molten substance extruded from the T-die while rapidly cooling it with a casting roll or the like.

[0037] For the film obtained as above, depending on the purpose such as reduction in thermal shrinkage, natural shrinkage, etc. and suppression of occurrence of width contraction, longitudinal stretching between heating rolls, various heat setting, or heat treatment such as

aging may be carried out. For the purpose of imparting and promoting anti-fogging property, antistatic property, tackiness, etc., surface treatment and surface processing such as treatment such as corona treatment and ripening, printing and coating and the like may be carried out.

[0038] The film described above is a film through which a wrapped food is visually recognizable from the outside. Further, the film is a film (stretch film) having stretchability (extendablility).

[0039] The film according to the present embodiment may be a sorting film for foods used for sorting foods. When using the film according to the present embodiment, two or more types of foods can be sorted into at least two groups according to the type of food. That is, for example, the first food can be wrapped in the film according to the present embodiment and sorted into the first group, while the second food can be wrapped in a film having a color different from that of the film according to the present embodiment or a colorless film and sorted into the second group.

[0040] Specifically, for example, when there is a first food containing a first allergic substance and a second food containing a second allergic substance, the first food is sorted into a first group that is a group of foods to be provided to a person having no allergic symptom with the first allergic substance, while the second food is sorted into a second group that is a group of foods to be provided to a person having no allergic symptom with the second allergic substance. In the above example, occurrence of an accident that the first or second allergic substance is provided to a person having an allergic symptom to the

allergic substance can be suppressed.

Examples

[0041] Hereinafter, the present invention will be more specifically described based on examples, but the present invention is not limited to the examples.

[0042] After charging the thermoplastic resin, blue colorant and various additives shown in Tables 1 and 2 into a super mixer, the material temperature was raised from normal temperature to 130°C while stirring the mixture. After mixing, the mixture was taken out when cooled down to 70°C to prepare a resin composition. Each resin composition was extruded at a resin temperature of 200°C with a Φ 40 mm single screw extruder (L/D = 20) equipped with a T-die (width 350 mm, gap 0.4 mm) to prepare a film having a thickness of 8 μ m. The numerical values in the tables are values in terms of solid content and represent % by mass.

[0043] Thermoplastic resin a1: Polyvinyl chloride resin ("TH-1000" manufactured by TAIYO VINYL CORPORATION, average degree of polymerization: 1000)

Blue colorant b1: Copper phthalocyanine (copper phthalocyanine blue, "NX-053 blue" manufactured by Dainichiseika Color & Chemicals Mfg. Co., Ltd.)

Additive c1: Adipic acid polyester ("D623" manufactured by J-PLUS Co., Ltd., number average molecular weight: 1800)

Additive c2: Dioctyl adipate ("SANSO CIZER DOA" manufactured by New Japan Chemical Co., Ltd.)

Additive c3: Epoxidized soybean oil ("Chemicizer SE-100"

manufactured by Sanwa Synthetic Chemical Industry Co., Ltd.)

Additive c4: Diglycerin fatty acid ester ("O-71-DE"

manufactured by RIKEN VITAMIN CO., LTD., diglycerin oleate)

Additive c5: Sorbitan fatty acid ester ("L-250A" manufactured

5 by RIKEN VITAMIN Co., Ltd., sorbitan laurate)

Additive c6: Ca/Zn Stabilizer ("SC-308E" manufactured by

ADEKA Corporation)

[0044] Measurements of the tensile modulus and the load when cutting
the film and evaluation on strength, stretchability, film forming property,
10 and productivity were conducted for each obtained film, the results of
which are shown in Tables 1 and 2.

[0045] (Measurement of Tensile Modulus)

The tensile modulus of the film conformed to JIS K7161 (ISO
527-1) and JIS K7127 (ISO 527-3) and was the tensile modulus
15 obtained by preparing a 10 mm width sample by cutting the film into a
piece with a width of 40 mm and a length of 150 mm or longer and
folding the piece into four in the width direction and measuring the
sample using a tensile testing machine (E3-L) manufactured by Toyo
Seiki Seisaku-sho, Ltd.

20 [0046] (Measurement of Load When Cutting Film)

A film 2 having a width of 30 cm and a length of 100 m that was
accommodated in a rectangular parallelepiped box 1 (with a length in
the longitudinal direction of 31 cm, a length in the lateral direction of
4.7 cm, and a height of 4.7 cm) by being wound around a paper tube
25 with an inner diameter of 27 mm and an outer diameter of 31 mm is
pulled out from the box for a length of 30 cm. A push-pull gauge 3

(manufactured by Aikoh Engineering Co., Ltd.) was then attached to a center 2a of the tip of the pulled-out film 2. The film 2 was pulled such that a blade direction of a metal saw blade 4 provided on the box 1 formed an angle of 45° with a pulling direction of the film 2, and the load when the film 2 was cut in this manner was measured as the load when cutting the film.

[0047] (Evaluation on Strength)

Strength was evaluated by visually observing how susceptible the film is to ripping and tearing when the film is covered over a stainless bowl.

A: Film strength is particularly good

B: Film strength is good

C: Film lacks strength

D: Film strength is very bad and film is susceptible to ripping and tearing

[0048] (Evaluation on Stretchability)

Stretchability was evaluated by visually observing the stretchiness of the film when the film is covered over a stainless bowl.

A: Film stretchability is particularly good

B: Film stretchability is good

C: Film lacks stretchability

D: Film stretchability is very bad

[0049] (Evaluation of Film-Forming Properties)

Each resin composition was extruded at a resin temperature of 200°C with a T-die extruder to mold a film, and the appearance of the obtained film was observed to evaluate film-forming properties.

Evaluation criteria are as follows. When it is evaluated as A or B, it can be said that the film is excellent in film-forming properties.

A: A film having a substantially uniform thickness was obtained, and no scorch occurred by extrusion for 24 hours.

5 B: Slight unevenness in the film thickness was observed, and a scorch occurred by extrusion for 24 hours.

C: Unevenness in the film thickness was large, and a scorch occurred by extrusion for 8 hours.

[0050] (Evaluation of Productivity)

10 The number of occurrences of production trouble (perforation, film runout and slit defect) per 24 hours occurring when extruding each resin composition at a resin temperature of 200°C with a T-die extruder to mold a film was counted to evaluate productivity. Evaluation criteria are as follows. When it is evaluated as A or B, it can be said
15 that the film is excellent in productivity.

A: The number of production trouble was 0 to 2

B: The number of production trouble was 3 to 4

C: The number of production trouble was 5 or more

[0051] [Table 1]

		Example							
		1	2	3	4	5	6	7	8
Composition (% by mass)	a1	75.0	75.0	75.0	75.0	75.0	74.0	73.0	70.0
	b1	1.0	1.0	1.0	1.0	0.7	2.0	1.3	1.0
	c1	3.0	5.0	6.0	3.0	6.0	6.0	8.0	10.0
	c2	9.0	7.0	6.0	9.0	6.3	6.0	9.0	6.0
	c3	9.0	9.0	9.0	9.0	9.0	9.0	6.0	10.0
	c4	1.0	1.0	1.0	1.0	1.0	1.0	0.7	1.5
	c5	1.0	1.0	1.0	1.0	1.0	1.0	0.7	0.5
	c6	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.0
Tensile modulus (MPa)		114	130	153	172	160	120	165	175
Load when cutting film (cN)		150	130	100	80	110	140	120	80
Strength		B	B	A	A	A	B	A	A
Stretchability		A	A	A	B	A	B	A	B
Film-forming properties		A	A	A	A	A	A	A	A
Productivity		A	A	A	A	A	A	A	A

[0052] [Table 2]

		Comparative Example					
		1	2	3	4	5	6
Composition (% by mass)	a1	75.0	75.0	70.0	79.0	72.6	70.5
	b1	1.0	1.0	1.0	1.0	0.4	2.5
	c1	2.0	10.0	3.0	4.0	12.0	6.0
	c2	10.0	2.0	12.0	4.0	5.0	10.0
	c3	9.0	9.0	12.0	9.0	8.0	8.0
	c4	1.0	1.0	1.0	1.0	1.5	1.0
	c5	1.0	1.0	1.0	1.0	0.5	1.0
	c6	1.0	1.0	1.0	1.0	1.0	1.0
Tensile modulus (MPa)		96	191	100	175	195	120
Load when cutting film (cN)		190	70	90	70	90	170
Strength		C	A	B	A	A	C
Stretchability		A	D	C	D	D	A
Film-forming properties		C	C	C	C	C	C
Productivity		C	C	C	C	C	C

Reference Signs List

[0053] 11... food wrapping rolled film with a box, 12... food wrapping film, 13... core material, 14... box, 15... blade part.

CLAIMS

1. A food wrapping film comprising:

a thermoplastic resin; and

a blue colorant, and

5 the food wrapping film having a tensile modulus of 110 to 180 MPa and a load when cutting the film of 80 to 150 cN.

2. The food wrapping film according to claim 1, wherein the thermoplastic resin is at least one selected from the group consisting of polyvinyl chloride resins, polyvinylidene chloride resins, polyolefin
10 resins, polystyrene resins, polyester resins and polyamide resins.

3. The food wrapping film according to claim 1 or 2, comprising, as the thermoplastic resin, 70% by mass or more based on the total amount of the film of at least one resin selected from the group consisting of polyvinyl chloride resins, polyvinylidene chloride resins
15 and polyolefin resins.

4. An article comprising:

the food wrapping film according to any one of claims 1 to 3;

a core material on which the food wrapping film is rolled; and

a box in which the food wrapping film and the core material are

20 stored,

wherein the box is provided with a blade part for cutting the food wrapping film.