The present invention [3] includes the coating composition described in the above-described [1] or [2], wherein the monomer composition includes an aromatic vinyl monomer.

[0014]

The present invention [4] includes the coating composition described in any one of the above-described [1] to [3], wherein an equivalent ratio (NCO/OH) of isocyanate groups of the polyisocyanate component to hydroxyl groups of the polyol component is 1.2 or more and 6.0 or less.

[0015]

The present invention [5] includes the coating composition described in any one of the above-described [1] to [4], wherein in the monomer composition, a mass ratio (carboxy group-containing monomer/hydroxyl group-containing monomer) of the carboxy group-containing monomer content to the hydroxyl group-containing monomer content is 0.03 or more and 0.1 or less.

[0016]

The present invention [6] includes the coating composition described in any one of the above-described [1] to [5], wherein a content ratio of the carboxy group-containing monomer is 0.1 parts by mass or more and 5.0 parts by mass or less with respect to 100 parts by mass of the total amount of the monomer composition.

[0017]

The present invention [7] includes the coating composition described in any one of the above-described [1] to [6], wherein a glass transition temperature of the acrylic polyol is -25°C or more and 80°C or less.

[0018]

The present invention [8] includes the coating composition described in any one of the above-described [1] to [7], wherein a number average molecular weight of the acrylic polyol is 6000 or more.

[0019]

The present invention [9] includes a laminate including a resin film, an inorganic thin film layer disposed on one side in a thickness direction of the resin film, a polyurethane layer disposed on one side in the thickness direction of the inorganic thin film layer, an adhesive layer disposed on one side in the thickness direction of the polyurethane layer, and a sealant layer

disposed on one side in the thickness direction of the adhesive layer, wherein the polyurethane layer includes a cured product of the coating composition described in any one of the above-described [1] to [8].

[0020]

The present invention [10] includes the laminate described in the above-described [9], wherein the inorganic thin film layer includes aluminum oxide and/or silicon oxide.

[0021]

The present invention [11] includes the laminate described in the above-described [9] or [10], wherein the resin film includes a polyester resin and/or a polyolefin resin.

EFFECT OF THE INVENTION

[0022]

In the coating composition of the present invention, the monomer composition which is a raw material of the acrylic polyol does not contain a (meth)acrylonitrile. Therefore, the coating composition of the present invention has excellent solubility with respect to an alkyl ester, and as a result, it has excellent handleability and workability.

[0023]

Further, the coating composition of the present invention contains the aromatic ring-containing isocyanate as a polyisocyanate component. Further, the coating composition of the present invention contains the polymer of the monomer composition containing the hydroxyl group-containing polymerizable monomer and the carboxyl group-containing polymerizable monomer as an acrylic polyol.

[0024]

Therefore, the coating composition of the present invention can obtain the laminate having excellent gas barrier properties and retort resistance (hot water resistance).

[0025]

Since the laminate of the present invention is obtained using the above-described coating composition, it is obtained with excellent workability, and also has excellent gas barrier properties and retort resistance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026]

FIG. 1 shows a schematic configuration view illustrating one embodiment of a laminate of the present invention.

[0288]

Table 1

No.			Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Ex. 8	Ex. 9	Ex. 10
Acrylic Polyol	Monomer Composition (parts by mass)	AA	1.9	1.9	1.9	1.9	0.7	0.7	0.7	0.7	0.7	0.7
		St	35	35	35	35	30	34	32.2	35	35	30
		MMA	42.1	42.1	42.1	42.1	50.8	42	42	34.6	43.3	48.8
		BA	1	1	1	1	8.5	0.8	0.1	7.3	1	0.5
		AN	-	-	-	-	-	-	-	-	-	-
		HEA	20	20	20	20	10	22.5	25	-	20	20
		HEMA	-	-	-	-	-	-	-	22.4	-	-
	AA/HEA,HEMA (mass ratio)		0.095	0.095	0.095	0.095	0.070	0.031	0.028	0.031	0.035	0.035
	Tg (°C)		63.7	63.7	63.7	63.7	65	60	57	64	63.7	65
	Mn		15000	15000	15000	15000	12000	16800	18400	17100	11500	15250
Polyisocyanate Component			D-110N	D-110N	D-110N	D-110N	D-110N	D-110N	D-110N	D-110N	D-110N	D-110N
R (NCO/OH)			6.3	4.2	2.1	1.1	4.2	4.2	4.2	4.2	4.2	4.2
Substrate Film			AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET
Solubility (Ethyl Acetate)			Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Slight Turbidity	Excellent	Excellent	Excellent
Blocking Properties			Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Before Retort	Adhesive Strength (N)		1.9	2.0	2.2	2.1	1.8	2.0	2.0	2.1	1.8	1.7
	OTR (cc/m^2·24hrs·atm)		0.5	0.5	0.6	0.8	1.0	0.5	0.5	0.9	0.5	0.5
After Retort	Adhesive Strength (N)		MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	OTR (cc/m^2·24hrs·atm)		0.7	0.6	0.7	0.9	1.4	0.6	0.6	1.2	0.6	0.6
OTR Reduction Rate Before and After Retort			1.40	1.20	1.17	1.13	1.40	1.20	1.20	1.33	1.20	1.20

[0289]

Table 2

[Table 2]

No.			Ex. 11	Ex. 12	Ex. 13	Ex. 14	Ex. 15	Ex. 16	Ex. 17	Ex. 18
Acrylic Polyol	Monomer Composition (parts by mass)	AA	1.9	0.7	0.7	1.9	1.9	1.9	1.9	1.9
		St	10	-	35	35	35	35	35	35
		MMA	10	35	-	42.1	42.1	42.1	42.1	42.1
		BA	58.1	44.3	44.3	1	1	1	1	1
		AN	-	-	-	-	-	-	-	-
		HEA	20	20	20	20	20	20	20	20
		HEMA	-	-	-	-	-	-	-	-
	AA/HEA,HEMA (mass ratio)		0.095	0.035	0.035	0.095	0.095	0.095	0.095	0.095
	Tg (°C)		-28.8	-5.1	6.0	63.7	63.7	63.7	63.7	63.7
	Mn		11570	13000	14200	15000	15000	15000	7550	7550
Polyisocyanate Component			D-110N	D-110N	D-110N	D-110N + T-50	D-131N	D-103H	D-110N	D-110N
R (NCO/OH)			4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Substrate Film			AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	AlOxPET	SiOxPET	SiOxBOPP
Solubility (Ethyl Acetate)			Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Blocking Properties			Bad	Good	Good	Good	Excellent	Excellent	Excellent	Excellent
Before Retort	Adhesive Strength (N)		MF	MF	MF	MF	1.8	1.2	2.0	0.4
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		1.1	1.0	1.0	0.5	0.5	1.0	0.5	2.8
After Retort	Adhesive Strength (N)		MF	MF	MF	MF	MF	MF	MF	MF
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		1.6	1.5	1.5	0.6	0.6	1.2	0.5	3
OTR Reduction Rate Before and After Retort			1.42	1.50	1.50	1.20	1.20	1.20	1.00	1.07

[0290]

Table 3

[Table 3]

No.			Comparative Ex. 1	Comparative Ex. 2	Comparative Ex. 3	Comparative Ex. 4	Comparative Ex. 5	Comparative Ex. 6
Acrylic Polyol	Monomer Composition (parts by mass)	AA	-	-	-	1	-	1.9
		St	-	-	-	-	35	35
		MMA	79	79	30	40	31	42.1
		BA	-	-	-	-	11.6	1
		AN	-	-	20	49	-	-
		HEA	21	-	-	-	-	20
		HEMA	-	21	50	10	22.4	-
	AA/HEA,HEMA (mass ratio)		0.000	0.000	0.000	0.000	0.000	0.095
	Tg (°C)		65.3	94.4	-	-	65	63.7
	Mn		16260	12100	-	-	11340	15000
Polyisocyanate Component			D-110N	D-110N	D-110N	D-110N	D-110N	D-160
R (NCO/OH)			4.2	4.2	4.2	4.2	4.2	4.2
Substrate Film			AlOxPET	AlOxPET	-	-	AlOxPET	AlOxPET
Solubility (Ethyl Acetate)			Excellent	Excellent	Insoluble	Insoluble	Excellent	Excellent
Blocking Properties			Excellent	Excellent	-	-	Excellent	Excellent
Before Retort	Adhesive Strength (N)		1.1	1.2	-	-	MF	MF
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		0.6	0.7	-	-	0.7	3.1
After Retort	Adhesive Strength (N)		MF	MF	-	-	MF	MF
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		1.5	2.4	-	-	1.4	4.5
OTR Reduction Rate Before and After Retort			2.50	3.43	-	-	2.03	1.45

[0291]

Table 4

[Table 4]

No.			Comparative Ex. 7	Comparative Ex. 8	Comparative Ex. 9	Comparative Ex. 10	Comparative Ex. 11	Comparative Ex. 12	Comparative Ex. 13	Comparative Ex. 14
Acrylic Polyol	Monomer Composition (parts by mass)	AA	-	-	-	1.9	-	-	-	1.9
		St	-	-	35	35	-	-	35	35
		MMA	79	79	31	42.1	79	79	31	42.1
		BA	-	-	11.6	1	-	-	11.6	1
		AN	-	-	-	-	-	-	-	-
		HEA	21	-	-	20	21	-	-	20
		HEMA	-	21	22.4	-	-	21	22.4	-
	AA/HEA,HEMA (mass ratio)		0.000	0.000	0.000	0.095	0.000	0.000	0.000	0.095
	Tg (°C)		65.3	94.4	65	63.7	65.3	94.4	65	63.7
	Mn		16260	12100	11340	15000	16260	12100	11340	15000
Polyisocyanate Component			XDI-TMP	XDI-TMP	XDI-TMP	HDI-TMP	XDI-TMP	XDI-TMP	XDI-TMP	HDI-TMP
R (NCO/OH)			4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Substrate Film			SiOxPET	SiOxPET	SiOxPET	SiOxPET	SiOxBOPP	SiOxBOPP	SiOxBOPP	SiOxBOPP
Solubility (Ethyl Acetate)			Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Blocking Properties			Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Before Retort	Adhesive Strength (N)		1.5	1.6	MF	MF	0.3	0.3	MF	MF
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		0.6	0.6	0.7	3.1	3.0	3.0	3.5	5.8
After Retort	Adhesive Strength (N)		MF	MF	MF	MF	MF	MF	MF	MF
	OTR ($cc/m^2 \cdot 24hrs \cdot atm$)		1.3	1.5	1.2	4.4	4.3	4.5	4.3	6.5
OTR Reduction Rate Before and After Retort			2.17	2.50	1.71	1.42	1.43	1.50	1.23	1.12