SUMIKAFLEX 410HQ

Type:	Ethylene-Vinyl acetate Copolymer Emulsion
Properties:	SUMIKAFLEX 410HQ (S-410HQ) is a high-ethylene type of ethylene vinyl acetate copolymer emulsion. SUMIKAFLEX 410HQ has a higher molecular weight than SUMIKAFLEX 401HQ, and it has good heat resistance. It has good adhesion to poor adhesive material just like SUMIKAFLEX 401HQ. Its handling is good because the temperature dependency of its viscosity is small.
Main application:	General adhesive Textile for non-wovens Additive for mortar

Physical properties:

Appearance		Milky white
Solid content	(%)	52 – 55
Viscosity	(mPa·s)	2000 – 4000
pH		4 – 7
Ave. particle size	(μm)	0.9
Density	(g/cm^3)	1.04
MFT	(°C)	0
Particle charge		Nonionic
Mechanical stability		Good
Tg	(°C)	–18
Tensile strength	(MPa)	8.9
Tensile elongation	(%)	700

< Technical Information of SUMIKAFLEX 410HQ >

1. Grade positioning

Standard EVA emulsion SUMIKAFLEX 400HQ
↓ (Tg: 0°C)

High ethylene EVA emulsion SUMIKAFLEX 401HQ
↓ (Tg: –18°C)

High molecular and high ethylene EVA emulsion SUMIKAFLEX 410HQ
(Tg: –18°C)

2. Emulsion properties

		Emulsion properties
Appearance		Milky white
Solid content	(%)	52 – 55
Viscosity	(mPa·s)	2000 – 4000
pH		4 – 7
Ave. particle size	(μm)	0.9
Density	(g/cm^3)	1.04
MFT	(°C)	0
Particle charge		Nonionic
Mechanical stability		Good
Tg	(°C)	– 18

3. Film properties

(1) Tensile strength

		S-410HQ	S-401HQ	S-400HQ
Tg (°C)		– 18	– 18	0
Original	Elongation (%)	700	850	550
	Strength (MPa)	8.9	6.2	12.7
Heat resistance(°C)		224	190	195

Test method

Thickness of film : 0.15 mm
Shape of film : Dumbbell No.3
Film forming condition and aging : 23°C × 65%RH × 7 days
Measurement speed : 500 mm/min

Heat resistance

Substrate	: Cotton #40
Adhesion area	: 31.25 mm^2 (12.5 × 25 mm)　Weight: 500 g
Increase Temperature speed	: 1°C/min
Judgment	: Separated Substrate

4. Application

(1) Adhesive for PET/paper

		S-410HQ	S-401HQ	S-400HQ
Original	Peel strength (N/25 mm)	2.1	2.1	1.9
	Broken position	Substrate	Substrate	Surface

Test method

Substrate	: Wood free paper/PET
Coating	: Bar coater #22 on paper
Lamination	: Laminate soon after coating and press with hand roller
Aging	: 3 days
Measurement	: Peel at 100 mm/min (T-shaped)

(2) Adhesive for olefin plywood

		S-410HQ	S-401HQ	S-400HQ
Original adhesive strength (N/25 mm)		49	46	48
Wet adhesive strength (N/25 mm)		8	12	13
60°C creep (mm)	5 hours	2	35	9
	24 hours	5	-	48

Test method

Olefin sheet	: Olefin sheet (surface treatment)
Plywood	: Lauan Type I 3-ply, 3 mm thick
Formulation	: Emulsion / Toluene =100 / 6
Coating weight	: Wet 130 g/m^2
Clamping	: 50 kg/30 cm×30 cm for 20 hours (23°C × 65%RH)
Aging	: 6 days after clamping (23°C × 65%RH)
Original adhesive strength	: Peel at 100 mm/min at a 180° angle
Wet adhesive strength	: After soaking in the water for 20 hours, peel 100 mm/min at a 180° angle
60°C Creep	: 60°C, 500 g weight and a 90° angle for static load test