SUMIKAFLEX 510HQ

Type:	Ethylene-Vinyl acetate Copolymer Emulsion
Properties:	SUMIKAFLEX 510HQ (S-510HQ) is HEC/nonionic surfactant emulsion. It is excellent for spray adequacy, miscibility with filler and cement, and machine stability. It has also good resistance for water and alkali liquid.
Main application:	Adhesives for paper and textile Paint Additives for mortars

Physical properties:

Appearance		Milky white
Solid content	(%)	55 ± 1
Viscosity	(mPa·s)	10 – 400
pH		4 – 7
Ave. particle size	(μm)	0.7
Density	(g/cm^3)	1.07
MFT	(°C)	0
Particle charge		Nonionic
Mechanical stability		Good
Tg	(°C)	0
Tensile strength	(MPa)	5.8
Tensile elongation	(%)	800

< Technical Information of SUMIKAFLEX 510HQ >

1. Grade positioning

2. Emulsion properties

		S-510HQ	S-400HQ
Appearance		Milky white	Milky white
Solid content	(%)	55 ± 1	55 ± 1
Viscosity	(mPa·s)	10 – 400	1100 – 1600
pH		4 – 7	4 – 7
Ave. particle size	(μm)	0.7	0.7
Density	(g/cm^3)	1.07	1.07
MFT	(°C)	0	0
Particle charge		Nonionic	Nonionic
Mechanical stability		Good	Good
Tg	(°C)	0	0

3. Film properties

(1) Tensile strength

		S-510HQ	S-400HQ
Original	Elongation (%)	800	550
	Strength (MPa)	5.8	12.7
Wet	Elongation (%)	600	600
	Strength (MPa)	2.9	3.3

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
Wet film strength	: film in water at room temperature for 24 hours
Measurement speed	: 500 mm/min

(2) Water drop examination

	S-510HQ	S-400HQ
Whiting time (min)	> 120	2

Test method

Foam film (thickness: 0.15 mm) on the slide glass at room temperature. The slide glass is on the 8-point Chinese character in a newspaper. Measure the time until the film is whitened after one drop of water, and the character cannot be read.

4. Application

(1) Heat sealing

Heat sealing temperature (°C)	Adhesive strength (N/25 mm)	
	S-510HQ	S-400HQ
60	9.1	10.6
80	16.2	17.4
100	27.8	32.7
120	35.6	32.2
140	42.7	33.6
160	–	38.3
180	–	–

Test method

Substrate: Cotton #40

Coating 1: Coating 0.03 mm thickness of emulsion

Coating 2: Coating 0.07 mm thickness of the emulsion after coating 1 and drying 1 min

Drying: 24 hours in the laboratory

Lamination: Seal at each lamination temperature after the coated sides are superposed

Peeling speed: 300 mm/min

(2) Flock treatment

Test method

Formulation: emulsion / cross-linked additive / catalyst of crosslink / thickener
= 100 / 6 / 0.6 / α

Substrate: Cotton #40

Rubbing test: Water resistance, Perchloroethylene resistance

Texture: Cantilever method

Dry condition: 80°C × 10 min → cured 130°C × 20 min

Textile

	S-510HQ	S-400HQ	Acryl emulsion A
Viscosity (mPa·s)	29900	37700	28800
Coating (g/m²)	255	254	259
Water resistance (times)	4040	2780	3500
Perchloroethylene resistance (times)	1	1	2060
Texture (cm)	6.2	8.5	5.4

Substrate: Nylon pile 1.5 d, thickness 0.5 mm

Application for shoes

	S-510HQ	S-400HQ	Acryl emulsion A
Viscosity (mPa·s)	29300	31100	29300
Coating (g/m²)	About 250	About 250	About 250
Water resistance (times)	3800	> 6000	3800
Perchloroethylene resistance (times)	1	1	> 4800
Texture (cm)	6.6	9.3	6.6

Substrate: Nylon pile 3.0 d, thickness 1.0 mm

Application for carpet

	S-510HQ	S-400HQ	Acryl emulsion A
Viscosity (mPa·s)	27500	35800	27500
Coating (g/m²)	340	335	337
Water resistance (times)	1900	3280	1140

Substrate: Nylon pile 14 d, thickness 3.0 mm