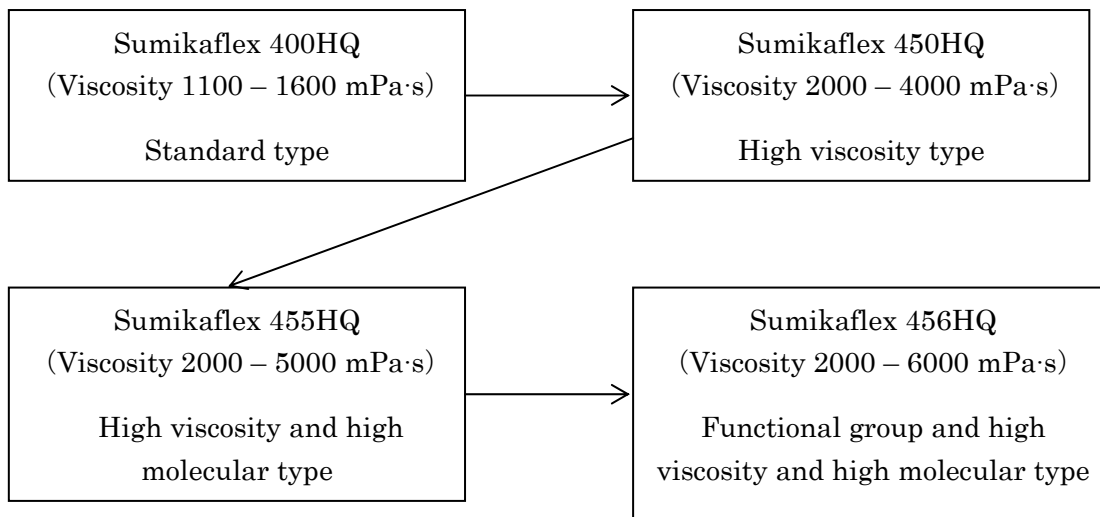


Sumikaflex 456HQ

Type:	Ethylene-Vinyl acetate Copolymer Emulsion	
Properties:	Sumikaflex 456HQ is the high molecular weight ethylene vinyl acetate copolymer emulsion with the functional group. It is similar polymer properties to Sumikaflex 455HQ and it is good water resistance and heat resistance and organic solvent resistance when it is mixed with hardening agent because it has functional group.	
Main application:	Adhesive use	
Physical properties :		
Appearance	Milky white	
Solid content (%)	55 ± 1	
Viscosity (mPa·s)	2000 – 6000	
pH	4 – 7	
Ave. particle (μm)	0.7	
Density (g/cm³)	1.07	
MFT (°C)	0	
Particle	Nonionic	
Mechanical	Good	
Tg (°C)	0	
Tensile (MPa)	12.0	
Elongation (%)	550	

< Technical Information of Sumikaflex 456HQ >

1. Grade



2. Emulsion properties

	Emulsion properties
Appearance	Milky white
Solid content (%)	55 ± 1
Viscosity (mPa·s)	2000 – 6000
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

2. Film properties

(1) Tensile strength

		S-456HQ	S-455HQ	S-400HQ
Dry	Elongation (%)	550	500	550
	Strength (MPa)	12.0	11.0	12.7

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

3. Application

(1) PVC sheet to plywood

		S-456HQ	S-455HQ	S-400HQ
Original adhesive strength (N/25 mm)		53	50	51
Wet adhesive strength (N/25 mm)		14	12	12
80°C Creep (mm)	1 hour	0.5	0.5	27
	24 hours	3	4	-

Test method

PVC sheet: Half semi rigid PVC sheet

Plywood: Lauan Type I 3 ply 3 mm thick

Formulation: Emulsion / Ammonia / Urethane Dispersion / Toluene / Thickener
= 100 / 0.2 / 34 / 5 / 1

Coating weight: Wet 130 g/m²

Clamping: 50 kg/30 cm × 30 cm 20 hours (2°C×65%RH)

Aging: 6 days after clamping (23°C × 65%RH)

Original adhesive strength: Peel 100 mm/min 180°angle

Wet adhesive strength: after in the water for 20 hours, peel 100 mm/min of 180°angle

80°C Creep: 80°C, 500 g weight of 90° angle for static load test

(2) Binder for impregnated paper

		Example					
Formulation	S-456HQ	100	100	100	0	0	
	S-455HQ	0	0	0	100	100	
	Srz.675A	0	1	3	0	1	
Basic weight (g/m ²)		147.7	145.2	153.0	149.3	152.0	
Dry Pick Up (%)		26.6	25.1	25.4	25.3	26.3	
Dry tensile strength 130°C × 5 min	Strength (N/1.5 cm)	76.3	79.0	81.5	73.9	76.9	
	Breaking length(km)	3.51	3.70	3.62	3.36	3.44	
Wet strength	Strength (N/1.5 cm)	110°C ×5 min	2.5	11.1	12.4	2.9	7.5
		130°C ×5 min	3.1	15.8	20.1	3.4	10.0
		150°C ×5 min	4.2	21.3	26.1	4.6	14.0
		170°C ×5 min	6.1	26.4	33.3	6.2	19.8
	Breaking length(km)	110°C ×5 min	0.11	0.52	0.55	0.13	0.34
		130°C ×5 min	0.14	0.74	0.89	0.16	0.45
		150°C ×5 min	0.19	1.00	1.16	0.21	0.63
		170°C ×5 min	0.28	1.24	1.48	0.28	0.89

Srz.675A: Sumirez Resin 675A (polyamide epoxy resin: products by Sumitomo chemical)

Test method

Master paper: filter paper No.2 (basic weight: 120 g/m²)

Dipping: mangle condition

25% dipping liquid

nip pressure: 0.2 MPa

DPU: 25 – 27%

Drying: at room temperature

Curing: 110°C × 5 min, 130°C × 5 min, 150°C × 5 min, 170°C × 5 min