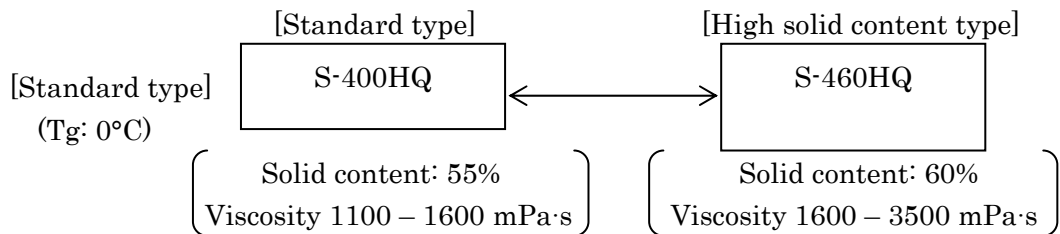


Sumikaflex 460HQ

Type:	Ethylene-Vinyl acetate Copolymer Emulsion	
Properties:	Sumikaflex 460HQ is higher solid content than Sumikaflex 400HQ, so it can be faster to dry up of operation time. As well as the adhesiveness of Sumikaflex 400HQ it is suitable for adhesiveness, dryness, thickener just.	
Main application:	Adhesive use	
Physical properties:		
Appearance		Milky white
Solid content (%)		60 ± 1
Viscosity (mPa·s)		1600 – 3500
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)		13.0
Elongation (%)		620

< Technical Information of Sumikaflex 460HQ >

1. Grade



2. Emulsion properties

	Emulsion properties
Appearance	Milky white
Solid content (%)	60 ± 1
Viscosity (mPa·s)	1600 – 3500
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

3. Film properties

(1) Tensile strength

		S-460HQ	S-400HQ	S-450HQ
Original	Elongation (%)	620	550	540
	Strength (MPa)	13.0	12.7	13.0
Wet	Elongation (%)	660	600	590
	Strength (MPa)	3.2	3.3	3.8

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

Wet: film in water at room temperature for 24 hours

(2) Water or alkali liquid of resistance of film

		S-460HQ	S-400HQ	S-450HQ
Water resistance	Elusion (%)	9	5	4
	Absorption (%)	19	16	16
Alkali resistance	Elusion (%)	12	9	12
	Absorption (%)	28	20	23

Test method

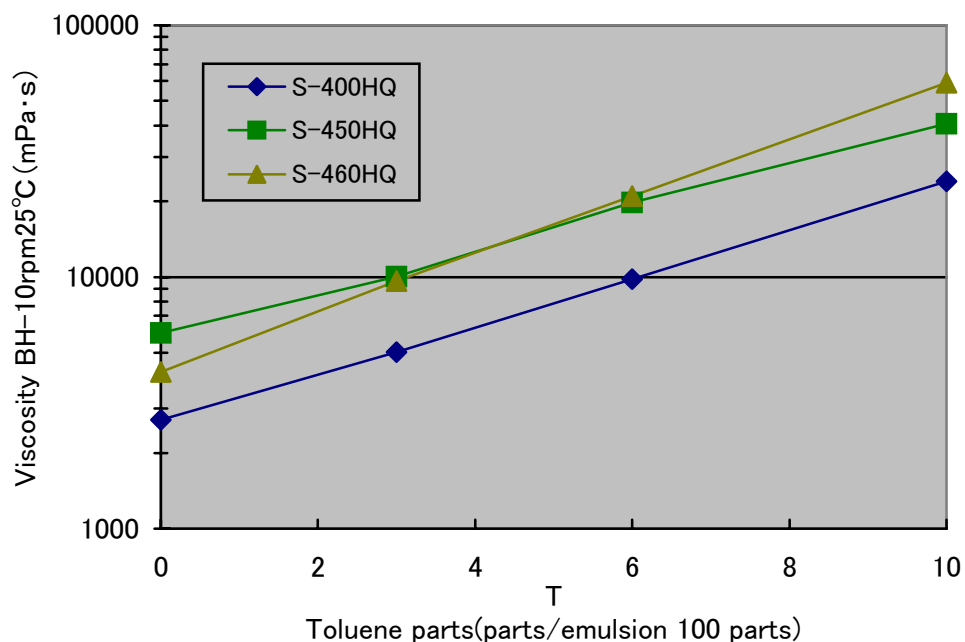
Thickness of film: 0.15 mm

Water resistance: film in water for 4 days at 23°C

Alkali liquid resistance: film in 1 N NaOH for 4 days at 23°C

4. Application

(1) Toluene viscosity



(2) PVC sheet to plywood

	Toluene parts	Adhesive strength (N/25 mm)		60°C Creep (mm/hr)
		Dry	Wet	
S-460HQ	0	50	19	4
	6	48	16	38
	10	46	16	50
S-400HQ	0	53	21	5
	6	49	15	40
	10	43	13	58
S-450HQ	0	52	25	6
	6	50	15	40
	10	45	14	55

Test method

PVC sheet: Half semi rigid PVC sheet

Plywood: Lauan Type I 3 ply 3mm thick

Formulation: Emulsion / toluene = 100/0, 6, 10

Coating weight: Wet 130 g/m²

Clamping: 50 kg/30 cm×30 cm 20 hours (23°C × 65%RH)

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

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

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

(3) PVC sheet to particle board

	Adhesive strength (N/25 mm)		60°C Creep (mm/10 min)
	Original	Wet	
S-460HQ	38	31	19
S-400HQ	35	27	18
S-450HQ	34	27	20

Test method

Particle board: JIS A5908 200-Utype

PVC sheet: Half semi rigid PVC sheet

Formulation: Emulsion / Toluene =100/6

Coating weight: Wet 110 g/m²

Clamping: 50 kg/30 cm × 30 cm for 20 hours (23°C × 65%RH)

Aging: 6 days after clamping ($23^{\circ}\text{C} \times 65\%\text{RH}$)

Original adhesive strength: Peel 50 mm/min of 180°

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

60°C Creep: 60°C , 90° , 500 g weight of 90° for static load test

(4) Set time

		S-460HQ	S-400HQ	S-450HQ
A	Craft paper/Craft paper (sec)	13	12	9
B	Craft paper/Aluminum (sec)	23	23	23
C	Craft paper/PVC sheet (sec)	20	18	12
D	Particle board/ PVC sheet (min)	50	55	50
E	Gypsum board/PVC sheet (min)	3	4	3

Test method

Adhesive: A – B: emulsion, C – E: emulsion/toluene = 100/6

Coating: A – C: Wet 50 g/m^2 D – E: Wet 110 g/m^2

Room condition: $23^{\circ}\text{C} \times 65\%\text{RH}$

Measurement: Laminated immediately after coating

Peel the substrate at a constant time.

Measure the time when the substrate are completely broken.

(5) Gum up property

	Gum up time (min.)
S-460HQ	52
S-400HQ	75
S-450HQ	61

Test method

Roll speed: 85 m/min