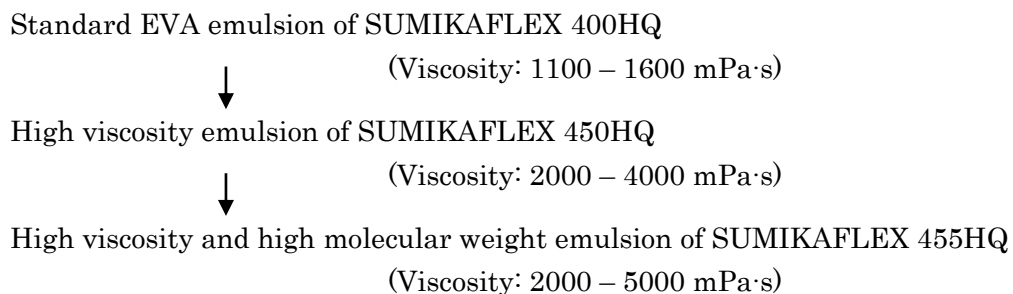


SUMIKAFLEX 455HQ

Type:	Ethylene-Vinyl acetate Copolymer Emulsion																																					
Properties:	SUMIKAFLEX 455HQ (S-455HQ) is an ethylene-vinyl acetate copolymer emulsion with high molecular weight. It has good heat resistance and organic solvent resistance. Its viscosity is higher than that of general EVA emulsion. Furthermore, it can be used for adhesion, especially non-creep properties for plastic overlay plywood.																																					
Main application:	Adhesives																																					
Physical properties:	<table> <tr> <td>Appearance</td><td></td><td>Milky white</td></tr> <tr> <td>Solid content</td><td>(%)</td><td>55 ± 2</td></tr> <tr> <td>Viscosity</td><td>(mPa·s)</td><td>2000 – 5000</td></tr> <tr> <td>pH</td><td></td><td>4 – 7</td></tr> <tr> <td>Ave. particle size</td><td>(μm)</td><td>0.8</td></tr> <tr> <td>Density</td><td>(g/cm³)</td><td>1.07</td></tr> <tr> <td>MFT</td><td>(°C)</td><td>0</td></tr> <tr> <td>Particle charge</td><td></td><td>Nonionic</td></tr> <tr> <td>Mechanical stability</td><td></td><td>Good</td></tr> <tr> <td>Tg</td><td>(°C)</td><td>0</td></tr> <tr> <td>Tensile strength</td><td>(MPa)</td><td>11.0</td></tr> <tr> <td>Tensile elongation</td><td>(%)</td><td>500</td></tr> </table>		Appearance		Milky white	Solid content	(%)	55 ± 2	Viscosity	(mPa·s)	2000 – 5000	pH		4 – 7	Ave. particle size	(μm)	0.8	Density	(g/cm ³)	1.07	MFT	(°C)	0	Particle charge		Nonionic	Mechanical stability		Good	Tg	(°C)	0	Tensile strength	(MPa)	11.0	Tensile elongation	(%)	500
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< Technical Information of SUMIKAFLEX 455HQ >

1. Grade positioning



2. Emulsion properties

	S-455HQ
Appearance	Milky white
Solid content (%)	55 ± 2
Viscosity (mPa·s)	2000 – 5000
pH	4 – 7
Ave. particle size (μm)	0.8
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-455HQ	S-450HQ	S-400HQ
Original	Elongation (%)	500	540	550
	Strength (MPa)	11.0	13.0	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

4. Application

(1) PVC sheet to plywood

		S-455HQ	S-450HQ	S-400HQ
Original adhesive strength (N/25 mm)		50	50	51
Wet adhesive strength (N/25 mm)		12	12	12
80° Creep (mm)	1 hour	0.5	25	27
	24 hours	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/m ²
Clamping	: 50 kg / 30 cm × 30 cm at 20 hours (23°C × 65%RH)
Aging	: 6 days after clamping (23°C × 65%RH)
Original adhesive strength	: Peel at 100 mm/min of at a 180° angle
Wet adhesive strength	: After soaking in water for 20 hours, peel at 100 mm/min at a 180° angle
80°C Creep	: 80°C, 500 g weight and a 90° angle for static load test