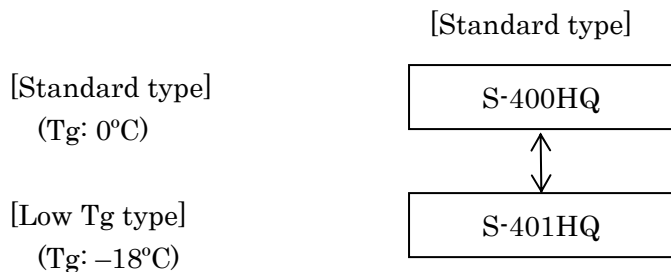


Sumikaflex 401HQ

| | | |
|------------------------------|--|-------------|
| Type: | Ethylene-Vinyl acetate Copolymer Emulsion | |
| Properties: | Sumikaflex 401HQ has higher ethylene content than Sumikaflex 400HQ, and its film is softer than Sumikaflex 400HQ. It is good for low temperature adhesion and alkali liquid resistance. It is also more stable than SBR latex. | |
| Main application: | Adhesive for paper and textile | |
| Physical properties: | | |
| Appearance | | Milky white |
| Solid content (%) | | 55 ± 1 |
| Viscosity (mPa·s) | | 800 – 1600 |
| pH | | 4 – 7 |
| Ave. particle size (μm) | | 0.7 |
| Density (g/cm ³) | | 1.04 |
| MFT (°C) | | 0 |
| Particle charge | | Nonionic |
| Mechanical stability | | Good |
| Tg (°C) | | – 18 |
| Tensile strength (MPa) | | 6.2 |
| Elongation (%) | | 850 |

< Technical Information of Sumikaflex 401HQ >

1. Grade



2. Emulsion properties

| | Emulsion properties |
|------------------------------|---------------------|
| Appearance | Milky white |
| Solid content (%) | 55 ± 1 |
| Viscosity (mPa·s) | 800 – 1600 |
| pH | 4 – 7 |
| Ave. particle size (μm) | 0.8 |
| Density (g/cm ³) | 1.04 |
| MFT (°C) | 0 |
| Particle charge | Nonionic |
| Mechanical stability | Good |
| T _g (°C) | - 18 |

3. Film properties

(1) Tensile strength

| | | S-401HQ | S-400HQ |
|----------|----------------|---------|---------|
| Original | Elongation (%) | 850 | 550 |
| | Strength (MPa) | 6.2 | 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) Adhesive

| | | S-401HQ | S-400HQ |
|--------------------------------------|----------|---------|---------|
| Original adhesive strength (N/25 mm) | PET | 5.9 | 0.7 |
| | OPP | 2.6 | 0.8 |
| | Aluminum | 8.8 | 7.8 |
| Wet adhesive strength (N/25 mm) | PET | 1.5 | 0.2 |
| | OPP | 2.0 | 0.8 |
| | Aluminum | 1.5 | 0.7 |

Test method

Substrate: Cotton #40/PET (thickness 0.075 mm) or OPP (thickness: 0.040 mm) or Aluminum (thickness: 0.1 mm)

Coating: 100 g/m² (40% concentration emulsion)

Lamination: Laminate soon after coating and press by hand roller

Aging: 4 days after clamping (23°C × 65%RH)

Original adhesive strength: Peel 200 mm/min of 180° angle

Wet adhesive strength: After in the water for 24 hours, peel 200 mm/min of 180° angle.

(2) Low temperature adhesion

| | Toluene /Emulsion = 3/100 | | Toluene /Emulsion = 6/100 | |
|---------|------------------------------|--------------------------|------------------------------|--------------------------|
| | Viscosity (25°C) (BH-10 rpm) | Low temperature adhesion | Viscosity (25°C) (BH-10 rpm) | Low temperature adhesion |
| S-401HQ | 3500 | Good | 7500 | Good |
| S-400HQ | 5000 | Bad | 10000 | Bad |

At 5°C atmosphere room, the substrate, emulsion and apparatus are leaved for 1 day. We test the examination and measure samples.

Test method

PVC sheet: Half semi rigid

Wood free paper: Basic weight of 150 g/m²

Formulation: Emulsion / toluene = 100/3, 6

Coating weight: Wet 50 g/m²

Clamping: 1 kPa at 20 hours (5°C)

Aging: 1 day after clamping (5°C)

Low temperature adhesion: Peel fast by hand after cut the sample out width of 25 mm.