



# SANHO CHEMICAL CO., LTD.

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## KINGMIDE 315-L

KINGMIDE 315-L is a polyaminoamide resin of low viscosity with many other benefits as an epoxy curing agent of the polyaminoamide nature. It's major applications include general adhesives, sealants, putties, concrete repair compounds and surface coatings.

### 1. SPECIFICATIONS

Appearance	: Brown-colored viscous liquid.
Viscosity (25°C)	: 1,500~3,000 mPa·s
Colour (Gardner)	: 10 Max.
Amine Value	: 440 ±20 (JIS method)
Specific Gravity	: 0.97 ( 25 / 25°C)
Flash Point	: 178°C
A.H.E.W.	: 85

### 2. RECOMMENDED MIXING RATIO

40~70 parts by weight to 100 parts of liquid epoxy resin whose epoxy equivalent weight is about 190.

### 3. CURING CHARACTERISTICS

Epoxy resin	: Employed Bisphenol-A type epoxy resin whose EEW is 190.
Total mass	: 100g
Room temperature	: 23°C

Epoxy resin / KINGMIDE 315-L	60 / 40	65 / 35	70 / 30
Peak exothermic time (hours)	2.5	2.8	3.1
Peak exothermic (°C)	104	89	55
Pot life (hours)	1.7	1.9	2.1

### 4. PHYSICAL PROPERTIES

The mechanical properties of the cured products of the KINGMIDE 315-L and the same epoxy resin as employed above were measured as follow ;

Epoxy resin / KINGMIDE 315-L	60 / 40	65 / 35	70 / 30
Tensile Strength (kgf/mm <sup>2</sup> )	6.6	6.5	6.1
Flexural Strength (kgf/mm <sup>2</sup> )	8.7	9.2	9.0
Flexural Modulus (kgf/mm <sup>2</sup> )	2.7×10 <sup>2</sup>	2.8×10 <sup>2</sup>	2.8×10 <sup>2</sup>
Compressive Strength (kgf/mm <sup>2</sup> )	8.0	8.5	8.9
Izod Impact Strength (kgf/cm-cm)	2.2	1.9	1.9
Rockwell Hardness (M-scale)	63	69	65
Eat Distortion Temp. (°C)	52	51	49



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### **5. LAP SHEAR STRENGTH**

Epoxy resin : Employed Bisphenol-A type epoxy resin whose EEW is 190.

Curing Temperature : 23°C for 7 days

Mild steel plates with sand blast treatment were employed whereon the lap shear strength of the mixtured resin of the epoxy resin and KINGMIDE 315-L was measured.

Epoxy resin / KINGMIDE 315-L	55 / 45	60 / 40	65 / 35	70 / 30	75 / 25
Lap shear strength (kgf/cm <sup>2</sup> )	178	189	173	168	183

### **6. CHEMICAL RESISTANCE**

Percentage increase in weight of the cured products of KINGMIDE 315-L and the same epoxy resin as employed above were measured as follow after being cured at 23°C for 7 days, and immersing into respective chemical substances.

Unit : %

Epoxy resin / KINGMIDE 315-L	60 / 40		65 / 35		70 / 30	
Immersing time ( days)	7	30	7	30	7	30
Tap water (23°C)	0.7	1.9	0.5	1.4	0.4	1.2
5% Salt solution	0.7	1.7	0.5	1.2	0.4	1.2
10% Caustic Soda Solution	0.6	1.3	0.3	1.0	0.4	1.0
10% Ammonia Solution	0.5	1.5	0.5	1.3	0.3	1.1
5% Sulfuric Acid Solution	9.6	19	3.1	5.8	0.8	1.7
5% Hydrochloric Acid Solution	4.8	10	1.7	3.6	0.6	1.5
Kerosene	0.1	0.1	0.0	0.2	0.0	0.2
Isopropanol	3.6	7.1	2.1	3.4	1.6	2.5
Methyl-isobutyl-ketone	7.9	14	8.6	12	14	18