SANHO CHEMICAL CO., LTD.
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KINGMIDE 315

KINGMIDE 315 is a high molecular weight Polyaminoamide type epoxy curing agent. It has provide the cured products with high orders of flexibility、adhesion、good chemical and water resistance, It's major applications include general adhesives, sealants, putties, concrete repair compounds and surface coatings.

1. SPECIFICATIONS

Appearance	：Brown-colored viscous liquid
Viscosity (mPa·s /25℃)	：8,000 ~ 12,000
Amine Value (JIS)	：335 ±15
Colour (Gardner)	：10 Max.
Specific Gravity (25/25℃)	：0.97
A.H.E.W.	：120

2. RECOMMENDED MIXING RATIO

2-1. 50~100 parts by weight to 100 parts of Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

2-2. 25~35 parts by weight to 100 parts of Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 490.

3. CURING CHARACTERISTICS

Employ Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.
Total mass employed ：100 gram
Temperature ：22~23℃

Epoxy / KINGMIDE 315	Mixing Ratio			
	70 / 30	60 / 40	50 / 50	40 / 60
Peak Exothermic Time (min.)	127	130	157	144
Peak Exothermic Temperature(℃)	35	39	52	52
Gel Time (approx. minutes)	190	150	130	132

4. PHYSICAL PROPERTIES

Employed a Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.
Curing time = 7 days, at 23℃

Epoxy / KINGMIDE 315	Mixing Ratio

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		70 / 30	60 / 40	50 / 50	40 / 60
Tensile Strength	(Kgf/mm2)	5.7	6.1	4.9	3.1
Flexural Strength	(Kgf/mm2)	9.3	9.6	8.9	4.1
Flexural Modulus	(Kgf/mm2)	2.4×10^2	2.5×10^2	2.3×10^2	1.3×10^2
Compressive Strength	(Kgf/mm2)	7.5	7.4	7.1	5.8
Izod Impact Test	(Kgf-cm/cm)	2.8	2.9	4.8	3.6
Rockwell Hardness	(M-scale)	25	24	25	16
Heat Distortion Temperature	(℃)	50	51	49	43

5. LAP SHERA STRENGTH

Epoxy resin : employed same epoxy resin as above **4.**

Curing Temperature：23℃ 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 was measure.

Mixing Ratio： Epoxy resin / KINGMIDE 315	80 / 20	70 / 30	60 / 40	50 / 50	40 / 60
Lap Shear Strength (kgf/cm2)	130	220	178	172	192

6. CHEMICAL RESISTANCE

Weight change of the cured products of an epoxy resin (=employed the same epoxy resin as **4.** with KINGMIDE 315 was measured as follow after immersing them for a specified period into following chemical substances.

Curing time：for 7days, at 22~23℃

(%：percent)

Mixing Ratio：Epoxy / 315	70 / 30			60 / 40			50 / 50		
Immersing Time	1	7	30	1	7	30	1	7	30
Tap Water	0.2	1.5	2.5	0.2	1.5	2.5	0.1	1.5	2.5
5% solution of Salt	0.2	1.3	1.9	0.1	1.2	1.7	0.1	1.2	1.7
10% of Caustic Soda	0.1	1.1	1.6	0.9	1.1	1.6	0.1	1.1	1.8
10% of Ammonia	0.2	1.4	2.2	0.1	1.2	2.0	0.1	1.2	2.3
5% solution of Sulfuric Acid	0.2	1.9	6.4	0.7	4.5	9.8	2.1	4.5	20.0
5% solution of Hydrochloric Acid	0.2	1.5	2.8	0.2	1.5	2.9	0.6	1.5	12.0
Kerosene	0.0	0.2	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Isopropanol	0.5	1.8	3.4	1.2	6.1	16	1.5	6.1	24.0
MIBK	8.0	19.0	39	2.6	12.0	25.0	1.6	12	18.0