SANHO CHEMICAL CO., LTD.
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KINGMIDE 305

KINGMIDE 305 is a typical polyaminoamide type epoxy curing agent. KINGMID 305 has large molecular weight, it thus provide the cured products with an epoxy resin with high orders of flexibility and adhesive.

1.SPECIFICATIONS

Appearance	：Brown-colored viscous liquid.
Viscosity (mPa·s /40℃)	：50,000 ~ 70,000
Amine Value (JIS)	：240±15
Colour (Gardner)	：10 Max.
Sp.Gr. (25℃)	：0.97
A.H.E.W.	：180

2.RECOMMENDED MIXING RATIO

(1) 30~40 parts by weight to 100 parts of bisphenol-A type epoxy resin whose epoxy equivalent weight is about 450~500.

(2) 80~120 parts by weight to 100 parts of bisphenol-A type epoxy resin whose epoxy equivalent weight is about 180~200.

3.CURING CHARACTERISTICS

Epoxy Resin ：employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

Total mass ：200gram (23℃)

Mixing Ratio	Epoxy / KINGMIDE 305 = 50 / 50
Peak exothermic time, min.	180
Peak exothermic temperature (℃)	30

4.PHYSICAL PROPERTIES

Epoxy Resin ：employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

Mixing Ratio ：Epoxy Resin / KINGMIDE 305 = 50 / 50

Curing condition		80℃×1 hour	80℃×2 hours	23℃×14days
Compressive strength	kgf/mm^2	6.0	6.1	
Bending strength	kgf/mm^2	7.2	7.1	6.2
Flexural modulus	kgf/mm^2	2.9×10^2	3.1×10^2	2.1×10^2

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5.DRYING PROPERTIES OF CURED FILMS

Epoxy Resin：employ bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

Mixture resins of KINGMIDE 305 and epoxy resin, based on following Mixing ratio, were coated onto the mild steel plates with sand blast treatment.

A= Epoxy resin was dissolved with Xylene. (Epoxy resin：Xylene = 70：30)

B= Solvents (Xylene：Isobutanol = 80：20)

Mixing Ratio A / KINGMIDE 305 / B	100 / 25 / 20	100 / 20 / 15
Drying properties (by Drying recorder, Dry film = 100↘, 22~23℃)		
Set to touch (hour)	0.65	1.1
Tack free (hour)	10.0	10.5
Dry through (hour)	24	24
Physical properties (Dry film = 100↘,two time coating,23℃×7days)		
Cross cut	25 / 25	25 / 25
Bending test (2 ㎜)	OK	OK
Du Pont Impact resistance test (1/2"× 500gram × 50cm)	OK	OK
Pencil Hardness	F	2B

6.CHEMICAL PROPERTIES OF CURED FILMS

Epoxy Resin：employ bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

A= Epoxy resin was dissolved with Xylene (Epoxy resin：Xylene = 70：30)

B= Solvents (Xylene：Isobutanol = 80：20)

Weight increase was measured after following chemical substances were permeated into cured products of KINGMIDE 305 with epoxy resin.

Mixing Ratio： A / KINGMIDE 305 / B		100 / 25 / 20				100 / 20 / 15			
Immersing days		7	14	30	60	7	14	30	60
5% Acetic acid solution		OK	6M	1L	---	OK	OK	2L	---
5% Sulfuric acid solution		OK	OK	OK	OK	OK	OK	OK	OK
5% Hydrochloric acid solution		OK	OK	OK	OK	OK	OK	OK	9S
10% Ammonia solution		OK	OK	OK	8VS	OK	OK	6VS	4S
10% Caustic soda solution		OK	OK	OK	OK	OK	OK	OK	OK
5% salt solution		OK	OK	OK	9VS	OK	OK	OK	OK
Tap water		OK	OK	OK	9VS	OK	OK	OK	9VS
Kerosene		OK	OK	OK	---	OK	OK	OK	---
Isopropanol		OK	OK	OK	---	OK	OK	OK	---
MIBK		OK	OK	OK	---	OK	OK	OK	
Salt spray resistance after 70 hours	Cross cut	25 / 25				25 / 25			
	Swelling width	1 ㎜				2 ㎜			
	Scribed	Unaffected				Unaffected			

Dry film thickness ：100 (two times coatings)

Curing time ：7 days , at 23℃

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7.SUGGESTED FORMULATIONS

(1) Varnish Formulation：

component 1：		component 2：	
Epoxy Resin(EEW :450~575)	400	KINGMIDE 305	144
MIBK	200	Xylene	200
Xylene	400	n-Butanol	100
Sum of comp.1	1,000	Sum of comp.2	444

(2) Zinc-Rich Primers Formulation：

component 1：(ball mill base)		component 2：	
Epoxy Resin(EEW :450~575)	44	KINGMIDE 305	15
Xylene	66	Xylene	12
n-Butanol	36	n-Butanol	9
MIBK	8	Sum of comp.2	36
Zinc Dust	900		
Benton 34	10		
Sum of comp.1	1,058		

(3)Tar-Epoxy Coating Formulation：

component 1：		component 2：	
Epoxy Resin(EEW :450~575)	100	KINGMIDE 305	36
Coal Tar	120	Xylene	25
Pigment / Filler	80	n-Butanol	5
Xylene	180	Sum of comp.2	66
MIBK	90		
Methanol	40		
Sum of comp.1	610		

(4)Chemical Resistant Formulation：

component 1：		component 2：	
Epoxy Resin(EEW :450~575)	122	KINGMIDE 305	44
Strontium chromate	107	Xylene	28
Titanium Dioxide	20	Isopropanol	72
Magnesium Silicate	49	n-Butanol	63
Diatomaceous Silica	26	Cellosolve Solvent	129
MIBK	18	Sum of comp.2	336
Xylene	56		
MEK	102		
Sum of comp.1	535		