



SANHO CHEMICAL CO., LTD.

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KINGCURE X-980W

KINGCURE X-980W is a modified polyamine waterborne curing agent capable of emulsifying and curing epoxy resins at room temperature without added surfactants. It is designed for use in zero VOC coatings, primers, decorative top coatings, water based adhesives for bonding new to old concrete where high reactivity at low temperature and excellent water resistance and high gloss coatings with film flexibility are required.

1. SALES SPECIFICATION

Appearance	: Light yellow viscous liquid.
Viscosity (mPa · s/ 25°C)	: 10,000 ~ 20,000
Colour (Gardner)	: 4 Max.
Amine Value (JIS)	: 210 ± 15
Specific Gravity (25 / 25°C)	: 1.13
Solid Content (%)	: 80 ± 3

2. RECOMMENDED MIXING RATIO

80 ~ 120 parts by weight to 100 parts of bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

3. CURING CHARACTERISTICS

3-1 Mixed Resin : Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W.

Solid Content(%) : 50 (Mixed resin diluted with water to 50 % solids)

Room Temperature : 23°C / 50 % RH

Film Thickness : The thickness of coated film on glass plate is 200 µm

Epoxy resin / KINGCURE X-980W	100 / 80	100 / 100	100 / 120
*Pot life (MIN.)	240	120	60

* Pot life : Coated film gloss start to dim as the time of pot life.

3-2 Drying characteristics

Mixed Resin : Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W.

Solid Content(%) : 50 (Mixed resin diluted with water to 50 % solids)

Film Thickness : The thickness of coated film on glass plate is 200 µm

The drying characteristics of coated films were measured by RCI drying recorder at 23°C / 50 % RH and 10°C / 85 % RH as follow :



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Epoxy resin / KINGCURE X-980W			100 / 80	100 / 100	100 / 120
23°C	Set to touch	(hours)	0.8	1.2	0.7
50 % RH	Tacky free	(hours)	3.0	2.5	2.7
	Dry through	(hours)	6.2	5.0	4.0

Epoxy resin / KINGCURE X-980W			100 / 80	100 / 100	100 / 120
10°C	Set to touch	(hours)	1.8	2.2	2.8
85 % RH	Tacky free	(hours)	7.7	7.5	6.8
	Dry through	(hours)	17.5	14.0	11.0

3-3 Pencil hardness characteristics

Mixed Resin : Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W.

Solid Content(%) : 50 (Mixed resin diluted with water to 50 % solids)

Film Thickness : The thickness of coated film on tin plate is 50 μm

The hardness change characteristics of the coated films were measured at 23°C / 50 % RH

Epoxy resin / KINGCURE X-980W			100 / 80	100 / 100	100 / 120
23°C	24	(hours)	HB	F	H
50 % RH	3	(days)	H	H	H
	7	(days)	H	H	H

4. WATER DILUTE CHARACTERISTICS

4-1 KINGCURE X-980W

Employed KINGCURE X-980W diluted with water, the viscosity change as follow :

Solids content(%)	80	70	60	50	40	30
Viscosity(Pa · s / 25°C)	11.5	8.1	6.4	4.7	1.8	haze

4-2 Mixed resin

Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W and diluted with water, the viscosity change at 25°C as follow :

Solids content (%)	90	80	70	60	50	40	30
Epoxy / KINGCURE X-980W							
100 / 80 (m Pa · s)	25,000	25,000	25,000	2,200	130	21	-
100 / 100 (m Pa · s)	25,000	25,000	25,000	4,100	240	25	7
100 / 120 (m Pa · s)	-	30,000	25,000	7,000	400	33	9

5. CLEAR COATING FILM EVALUATION TEST



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5-1 Physical property

Mixed Resin : Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W.

Solid Content(%) : 50 (Mixed resin diluted with water to 50 % solids)

Film Thickness : The thickness of coated film on mild steel plate is 50 μm

Curing Condition : 7 days at 23°C / 50 % RH

Epoxy resin / KINGCURE X-980W	100 / 80	100 / 100	100 / 120
Adhesive (Cross Cut, 2 mm width)	25 / 25	25 / 25	25 / 25
Impact Resistance (ϕ 2 mm)	Pass	Pass	Pass
Impact Resistance (Du Pond, 1/2", 500g)	500	500	500

5-2 Water Resistance

Mixed Resin : Employed bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190 mixture with KINGCURE X-980W.

Solid Content(%) : 50 (Mixed resin diluted with water to 50 % solids)

Film Thickness : a) The thickness of coated film on mild steel plate is 50 μm
b) painting on asbestos plate

Curing Condition : After cured for 7 days at 23°C / 50 % RH. The test plates were immersed into water for 7 days. Observe test plates surface according to JAPAN PAINT INSPECTING ASSOCIATION STANDARDS as follow :

Epoxy resin / KINGCURE X-980W	100 / 80	100 / 100	100 / 120
Mild steel plate	10	10	4-vs
Asbestos plate	10	10	10