



SANHO CHEMICAL CO., LTD.

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FUJICURE FXM-824A & FXM-824B

FUJICURE FXM-824A & FXM-824B are the modified activated aromatic amine curing agent for use with liquid epoxy resin. Special features of FXM-824A include the ability to cure below ambient temperatures and give excellent all-round chemical resistance; Special features of FXM-824B include long working life at ambient temperatures and give excellent all-round chemical resistance. FXM-824A is relatively fast curing with a short pot-life. FXM-824A & FXM-824B can be combined with different ratio to adjust the pot lives and curing times.

1. SPECIFICATIONS

	FXM-824A	FXM-824B
Appearance	: Honey-colored liquid	: Honey-colored liquid
Viscosity (mPa · s /25°C)	: 2,500 ~ 3,500	: 2,000 ~ 3,000
Amine value (JIS)	: 290±10	: 290 ± 10
Colour (Gardner)	: 18 Max.	: 18 Max.
Specific gravity(25/25°C)	: 1.13	: 1.12
Flash point (°C)	: 188	: 189
A.H.E.W.	: 95	: 95

2. RECOMMENDED MIXING RATIO

The mixing ratio of FXM-824A & FXM-824B to 100 parts of liquid epoxy resin whose epoxy equivalent weight is about 190 as follow;

FXM-824A	FXM-824B
40~60(Phr)	40~60(Phr)

3. CURING CHARACTERISTICS

3-1 Exothermic reaction

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

Total mass : 100g

Room temperature : 23°C

(1) different ratio of FXM-824A & FXM-824B to 100 parts of liquid epoxy resin.

Epoxy resin / Hardener	FXM-824A			FXM-824B		
	100 / 40	100 / 50	100 / 60	100 / 40	100 / 50	100 / 60
Peak exothermic time (min.)	27	23	20	—	—	—
Peak exothermic temp.(°C)	163	179	183	24	24	25

(2) different combine ratio of FXM-824A & FXM-824B; (Epoxy / Hardener = 100/50)

Mix rate = FXM-824A / 824B	10 / 0	8 / 2	6 / 4	4 / 6	2 / 8	0 / 10
Peak exothermic time (min.)	23	28	37	68	138	—
Peak exothermic temp.(°C)	179	171	169	143	39	24



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3-2 Drying characteristics

The drying characteristics of the coated films of the mixture resin of FXM-824A & FXM-824B and the epoxy resin as employed above were measured by RCI drying recorder as follow;

(1) different ratio of FXM-824A & FXM-824B to 100 parts of liquid epoxy resin.

Epoxy resin / Hardener	FXM-824A			FXM-824B		
	100 / 40	100 / 50	100 / 60	100 / 40	100 / 50	100 / 60
Set to Touch Time (hours)	1.3	1.2	1.2	50	39	34
Tack Free Time (hours)	3.6	2.9	2.8	> 58	55	49
Dry Through Time (hours)	6.6	6.0	5.7	> 58	> 58	> 58

(2) different combine ratio of FXM-824A & FXM-824B; (Epoxy / Hardener = 100/50)

Mix rate = FXM-824A / 824B	10 / 0	8 / 2	6 / 4	4 / 6	2 / 8	0 / 10
Set to Touch Time (hours)	1.2	1.7	2.2	3.9	7.5	39
Tack Free Time (hours)	2.9	3.6	4.7	7.1	14	55
Dry Through Time (hours)	6.0	6.2	8.0	12	24	> 58

4. MECHANICAL / PHYSICAL PROPERTIES

The mechanical properties of the cured products of the FUJICURE FXM-824A & 824B and the same epoxy resin as employed above were measured as follow;

Epoxy resin / Hardener	FXM-824A			FXM-824B		
	100 / 40	100 / 50	100 / 60	100 / 40	100 / 50	100 / 60
Tensile strength (kgf/mm ²)	7.6	7.3	6.8	4.2	5.1	5.4
Flexural strength (kgf/mm ²)	10.7	11.5	10.8	6.5	9.1	10.1
Flexural modulus (kgf/mm ²)	4.5×10 ²	4.3×10 ²	4.3×10 ²	3.1×10 ²	3.7×10 ²	3.9×10 ²
Compressive strength (kgf/mm ²)	10.7	10.7	9.9	7.6	8.7	8.7
Izod impact strength (kgf-cm/cm)	2.0	2.3	2.3	1.3	1.5	1.8
Rockwell hardness (M-scale)	73	76	73	67	75	82
Heat distortion temp. (°C)	49	52	53	41	44	47



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5. CHEMICAL RESISTANCE

Percentage increase in weight of the cured products of FUJICURE FXM-824A & 824B and the same epoxy resin as employed above were measured as follow after being cured at 22~23°C for 7 days, and immersing into respective chemical substances.

5-1 FUJICURE FXM-824A

unit:%

Epoxy Resin / FXM-824A	100 / 40			100 / 50			100 / 60		
	1	7	30	1	7	30	1	7	30
Tap water (23°C)	0.1	0.4	0.8	0.1	0.4	0.9	0.1	0.4	0.9
5% salt solution	0.1	0.4	0.8	0.1	0.4	0.8	0.1	0.4	0.9
10% caustic soda solution	0.1	0.3	0.6	0.1	0.3	0.7	0.1	0.3	0.7
10% ammonia solution	0.2	0.5	1.1	0.2	0.6	1.3	0.2	0.8	1.6
5% sulfuric acid solution	0.1	0.4	0.8	0.1	0.4	0.8	0.1	0.4	0.9
5% hydrochloric acid solution	0.1	0.3	0.7	0.1	0.4	0.8	0.1	0.4	1.0
Kerosene	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Isopropanol	0.1	1.2	3.0	0.1	1.1	2.4	0.1	1.2	2.5
MIBK	3.4	14	12	1.4	7.9	16	1.3	7.5	16

5-2 FUJICURE FXM-824B

unit:%

Epoxy Resin / FXM-824A	100 / 40			100 / 50			100 / 60		
	1	7	30	1	7	30	1	7	30
Tap water (23°C)	0.1	0.3	0.7	0.1	0.3	0.7	0.1	0.3	0.7
5% salt solution	0.1	0.3	0.6	0.1	0.3	0.6	0.1	0.3	0.6
10% caustic soda solution	0.1	0.2	0.5	0.1	0.3	0.5	0.1	0.2	0.5
10% ammonia solution	0.1	0.4	0.8	0.1	0.4	0.8	0.1	0.4	0.8
5% sulfuric acid solution	0.1	0.3	0.6	0.1	0.3	0.6	0.1	0.3	0.7
5% hydrochloric acid solution	0.1	0.3	0.6	0.1	0.3	0.6	0.1	0.4	0.8
Kerosene	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Isopropanol	0.2	1.1	2.4	0.1	0.9	1.8	0.1	1.1	2.0
MIBK	6.5	17	13	4.5	12	19	3.9	11	19