



SANHO CHEMICAL CO., LTD.

NO. 1 CHUNG SHAN S. RD., LU-CHU, KAOSHIUNG, TAIWAN.

TEL : 886-7-6962211~3

http : // www.sanho.com.tw

FAX : 886-7-6976993 (Sales)

E-mail : sanho@sanho.com.tw

FAX : 886-7-6961782 (Export)

E-mail : sanho@so-net.net.tw

TOHMIDE 225-X

TOHMIDE 225-X is a polyaminoamide type epoxy curing agent. It's major applications include general adhesives, sealants, civil engineering, concrete repair compounds and surface coatings.

1. SPECIFICATIONS

Appearance	: Brown-colored viscous liquid.
Viscosity (40°C)	: 8,000~12,000 mPa·s
Colour (Gardner)	: 10 Max.
Amine Value	: 340±15
A.H.E.W.	: 115
Sp.Gr. (25°C)	: 0.97

2. RECOMMENDED MIXING RATIO

- (1) 20~25 parts to 100 parts of Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 490.
- (2) 50~100 parts to 100 parts of Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

3. CURING CHARACTERISTICS

Epoxy resin	: Employed Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.
Total mass	: 100 gram
Room temp.	: 23°C

EXOTHERMIC REACTION			
Epoxy resin / TOHMIDE 225-X	70 / 30	60 / 40	50 / 50
Peak exothermic time. (min.)	152	159	189
Peak exothermic temp. (°C)	32	35	44
Gel time (h)	3.0	2.5	2.0



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4. PHYSICAL PROPERTIES

Employed Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.
 Curing time=7 days at 23°C (JIS K6911)

Epoxy resin / TOHMIDE 225-X	60 / 40	50 / 50	40 / 60
Tensile Strength (kgf/mm ²)	5.4	4.6	2.9
Flexural Strength (kgf/mm ²)	5.6	7.3	2.3
Flexural Modulus (kgf/mm ²)	1.5×10 ²	2.0×10 ²	0.8×10 ²
Compressive Strength (kgf/mm ²)	5.8	6.4	3.7
Izod Impact Strength (kgf/cm-cm)	2.8	5.2	3.6
Rockwell Hardness (M-scale)	11.5	21.0	6.5
Heat Distortion Temp. (°C)	37	48	38

5. LAP SHEAR STRENGT

Mild steel plates with sand blast treatment were employed whereon the lap shear strength of the mixtured resin of the epoxy resin and TOHMIDE 225-X was measured.

Epoxy resin : Employed same epoxy resin as above 4.

Curing time : 7 days at 23°C

Epoxy resin / TOHMIDE 225-X	80 / 20	70 / 30	60 / 40	50 / 50	40 / 60
Lap shear strength (kgf/cm ²)	116	197	192	174	185

6. CHEMICAL RESISTANCE

Weight change of the cured products of an epoxy resin (=employed the same epoxy resin as 4.) with TOHMIDE 225-X was measured as follow after immers them for a specified period into following chemical substances.

Curing time : 7 days at 23°C

Unit : %

Epoxy resin / TOHMIDE 225-X	70 / 30			60 / 40			50 / 50		
	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% salt solution	0.2	1.3	1.9	0.1	1.2	1.7	0.1	1.2	1.7
10% caustic Soda Solution	0.1	1.1	1.6	0.9	1.1	1.6	0.1	1.2	1.8
10% ammonia Solution	0.2	1.4	2.2	0.1	1.2	2.0	0.1	1.5	2.3
5% sulfuric Acid Solution	0.2	1.9	6.4	0.7	4.5	10.2	2.2	15	24
5% hydrochloric Acid Solution	0.2	1.5	2.8	0.2	1.5	2.9	0.6	4.5	12
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	17	1.5	6.1	26
Methyl-isobutyl-ketone	8.6	21	39	2.9	14	27	1.3	13	21