



SANHO CHEMICAL CO., LTD.

NO. 1, ZHONGSHAN S. RD., LUZHU DIST., KAOHSIUNG CITY, TAIWAN.
TEL : 886-7-6962211~3 [http : // www.sanho.com.tw](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 2400

TOHMIDE 2400 is a low viscosity , reactive polyamide hardner. This product is designed for use with liquid epoxy resins to get long pot life with room temperature cure.

TOHMIDE 2400 is useful in civil engineerings,linings..and medium heat adhesives.

1. SALES SPECIFICATION

Appearance	: Brown viscous liquid
Viscosity (25°C)	: 2,500 ~ 5,000 mPa · s
Colour (Gardner)	: 10 Max.
Amine Value (JIS)	: 355 ± 15
Specific Gravity (25 / 25°C)	: 0.97
Flash point (°C)	: 250

2. RECOMMENDED MIXING RATIO

60 ~ 120 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 : 200 gram

Room Temperature : 23°C

Epoxy / TOHMIDE 2400		100 / 80
Peak Exothermic Time	(min.)	217
Peak Exothermic Temperature	(°C)	47
Gelling Time	(min.)	< 150

4. MECHANICAL/PHYSICAL PROPERTIES

Epoxy resin : bisphenol-A type liquid epoxy resin whose epoxy equivalent weight is about 190. Precured at 23°C for 7 days and settle in room temperature for one day then put in oven 80°C for one hours.



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CURING CONDITION		23°C				80°C / 1hr		
Epoxy / TOHMIDE 2400		70 / 30	60 / 40	50 / 50	40 / 60	70 / 30	60 / 40	50 / 50
Tensile Strength	(kgf/mm ²)	1.3	3.0	3.6	0.9	5.1	5.1	4.6
Flexural Strength	(kgf/mm ²)	-	2.8	4.6	0.2	0.1	6.2	6.5
Flexural Modulus	(kgf/mm ²)	3.0×10 ²	9.5×10 ²	1.5×10 ²	1.3×10 ²	9×10 ²	2.2×10 ²	2.5×10 ²
Compressive Strength	(kgf/mm ²)	1.4	3.7	4.2	4.7	6.5	6.2	5.2
Izod Impact Strength	(kgf-cm/cm)	2.3	1.4	1.4	4.9	2.0	2.6	4.2
Rockwell Hardness	(M Scale)	-	30	27	-	64	63	54
H D T.	°C	27	38	42	17	41	50	47

5. LAP SHEAR STRENGTH

The resin mix of TOHMIDE 2400 and the same epoxy resin as employed above was applied to hold mild steel plates at 22~23°C, whose surface were treated by sand-blast. LAP SHEAR STRENGTH was measured as follow after leaving the bonded steel plates at 22~23°C for 7 days. and settle in room temperature for one day then put in oven 80°C for one hours.

Epoxy / TOHMIDE 2400	23°C					80°C / 1hr				
	25	43	67	100	120	25	43	67	100	120
Lap Shear Strength (kgf/cm ²)	31	182	197	186	128	46	209	213	200	126

6. CHEMICAL RESISTANCE OF THE CURED PRODUCTS

6-1:Percentage increase in weight of the cured products of TOHMIDE 2400 and the same epoxy resin as employed above were measured as follow after curing them at an ambient temperature 22~23°C for 7 days, and settle in room temperature for one day then put in oven 80°C for one hours then immersing into following chemical substances.

Immersion time (days)	1 day			7 days			30 days		
	7/3	6/4	5/5	7/3	6/4	5/5	7/3	6/4	5/5
Tap Water	0.96	0.24	0.59	0.97	0.76	1.33	1.90	1.68	2.57
5% solution of Salt	0.29	0.29	0.44	0.87	0.95	1.2	1.74	1.78	2.15
10% solution of Caustin soda	0.39	0.25	0.29	0.71	0.71	0.88	1.34	1.54	1.88
10% solution of Ammonia	0.33	0.30	0.56	0.85	0.93	1.04	1.68	1.84	2.16
5% solution of Surfrucic Acid	0.51	0.86	4.32	1.14	2.30	8.14	2.05	3.86	13.1
5% solution of Hydrochloric Acid	0.41	0.29	3.21	0.99	1.88	6.33	1.83	3.35	10.8
Kerscene	0.15	0.23	0.72	0.24	0.42	1.34	0.37	0.56	1.79
Isopropylalcohol	2.28	2.91	5.64	4.25	6.41	11.8	5.42	9.94	23.8
Metyliso butylketone	29.3	11.8	8.40	35.6	32.5	21.8	27.0	29.4	29.0



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6-2: settle in room temperature for one day then put in oven 80°C for one hours

Immersion time (days)	1 day			7 days			30 days		
	7/3	6/4	5/5	7/3	6/4	5/5	7/3	6/4	5/5
Epoxy / TOHMIDE 2400									
Tap Water	0.3	0.3	0.8	0.8	0.9	1.9	1.6	1.8	3.2
5% solution of Salt	0.3	0.3	0.8	0.8	0.8	1.6	1.4	1.7	2.8
10% solution of Caustin soda	0.3	0.3	0.5	0.7	0.8	1.2	1.4	1.5	2.3
10% solution of Ammonia	0.4	0.5	0.9	1.0	1.1	2.0	1.7	1.9	3.3
5% solution of Surfrucic Acid	0.5	1.2	4.7	1.1	2.4	10	1.8	3.8	15
5% solution of Hydrochloric Acid	0.4	1.0	4.5	0.9	1.9	7.2	1.6	3.2	11
Kerscene	0.2	0.3	1.5	0.3	0.6	2.3	0.4	0.8	2.7
Isopropylalcohol	2.5	2.5	5.2	4.6	5.4	9.7	5.7	8.5	18
Metyliso butylketone	26	8.7	7.7	36	22	19	27	28	29