

Test Report No. S09MEC02898/KSY (QM-0409-124)
dated 22 MAY 2009



PSB Singapore

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SUBJECT:

Testing of Epoxy Material

TESTED FOR:

ERP Hychem Sdn Bhd
Lot 8018 Off Jalan 4D
Kg Baru Subang
40150 Shah Alam
Selangor
Malaysia

Attn: Mr Nick Ng

SAMPLES DESCRIPTION:

The following epoxy test specimens were submitted by ERP Hychem Sdn Bhd on 12 May 2009 for testing.

Approximate Dimensions

300 mm x 13 mm x 15 mm
100 mm x 100 mm x 15 mm
127 mm x 13 mm x 15 mm
3 " mm x 1 " mm x 15 mm
30 mm x 30 mm x 15 mm
½ " x ½ " x 15 mm

Quantity

7pcs
1pc
17pcs
5pcs
1pc
7pcs

TEST METHODS:

1. Specific Gravity / Density
ASTM D792 : 2000
Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

Nominal specimen dimensions : ½ " x ½ " x 15 mm
No. of determinations : 2

2. Rockwell Hardness (M Scale)
ASTM D785 : 2003
Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials

Nominal specimen dimensions : ½ " x ½ " x 15 mm
No. of determinations : 7



Laboratory:
TÜV SÜD PSB Pte. Ltd.
Testing Services
No.1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223
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TEST METHODS: (CONT'D)

3. Heat Deflection Temperature
ASTM D648 : 2000a
Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position

Nominal specimen dimensions : 127 mm x 13 mm x 15 mm
Max. fibre stress : 264 psi
Heat Transfer Medium : Silicone Oil
Heating rate : 120 °C / h
No. of determinations : 2

4. Flammability
Reference : ASTM D635 : 2003
Standard Test Method for Rate of Burning and / or Extent and Time of Burning of Plastics in a Horizontal Position

Nominal specimen dimensions : 127 mm x 13 mm x 15 mm
Flaming Duration : 30 sec
No. of determinations : 10

5. Water Absorption
ASTM D570 : 1998
Standard Test Method for Water Absorption of Plastics

Nominal Specimen dimensions : 3 " x 1 " x 15 mm
Conditioning of test specimens : 50 ± 2 °C for 24 h
Immersion condition : 23 ± 2 °C for 24 h
Reconditioning of test specimens : 50 ± 2 °C for 24 h
No. of determinations : 3

6. Compressive Strength
ASTM D695 : 2002a
Standard Test Method for Compressive Properties of Rigid Plastics

Nominal specimen dimensions : ½ " x ½ " x 15 mm
Crosshead speed : 1.3 mm/min
No. of determinations : 5

7. Flexural Properties
ASTM D790 : 2003
Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulation Materials

Nominal specimen dimensions : 127 mm x 13 mm x 15 mm
Support span length : 248 mm
Crosshead speed : 6.62 mm/min
No. of determinations : 5



TEST RESULTS:

Characteristics	Unit	Epoxy Material
1. Density, average	g/cm ³	1.95
2. Rockwell Hardness (M Scale), average	-	90
3. Heat Deflection Temperature, average	°C	115
4. Flammability	-	The flame front did not reach or pass the 25 mm reference mark
5. Water Absorption, average	%	0.022
a) Increase in weight		0.021
b) Soluble matter loss		0.001
6. Compressive Strength, average	MPa	136.5
7a Flexural Strength, average	MPa	55.1
7b. Flexural Modulus, average	MPa	16205

Kong Siew Yong
Associate Engineer

Dr Liu Jian Hong
Product Manager
Polymer Products
Mechanical Centre



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