



Aditya Birla Chemicals (Thailand) Ltd. (Epoxy Division)

EPOTEC YDH 184/ TH 7351 / TA 7851

Liquid Hot Curing EPOTEC Casting Resin System

YDH 184 100 Pbw
 TH 7351 90 Pbw
 TA 7851 0.5- 2 Pbw
 Silica 270-300 Pbw

Description

EPOTEC YDH 184 is a low viscosity, low molecular weight, and unmodified cycloaliphatic epoxy resin designed for high voltage outdoor electrical applications.

EPOTEC TH 7351 is a waxy solid anhydride hardener, which melts above 35 °C, and TA 7851 is a tertiary amine accelerator.

When appropriate quantity of hardener, accelerator, and filler are mixed with resin and casted under vacuum, very good mechanical and electrical properties with very high uniformity can be achieved.

Processing

Automatic pressure gelation, pressure gelation and conventional casting.

Application

Electrical insulation for medium voltage outdoor applications such as switchgear components, instrument transformers, bushings, line post and pin insulators.

Typical properties

EPOTEC YDH 184

Property	Test method	Unit	Specification
Appearance	Visual	-	Clear liquid
Viscosity @ 25 °C	JIS K 7233	cPs	450 - 900
Specific gravity @ 25 °C	TEC-AS-P-004	-	1.14 – 1.20
Epoxy equivalent weight (EEW)	DIN 16945/4.15B (89) TEC-AS-C-002	g/eq	165 -177
Moisture Content	TEC-AS-C-017	ppm	1000

EPOTEC TH 7351

Property	Test method	Unit	Specification
Appearance	Visual	-	White waxy solid
Melting point	TEC-AS-P-008	°C	35 - 40
Specific gravity @ 25 °C	TEC-AS-P-004	-	1.12 - 1.16

EPOTEC TA 7851

Property	Test method	Unit	Specification
Appearance	Visual	-	Pale yellow clear liquid
Viscosity @ 25 °C	JIS K 7233	cPs	5 - 15
Specific gravity @ 25 °C	TEC-AS-P-004	-	0.90 - 0.95

Casting mix preparation method

The resin and hardener are preheated at 60 °C and then mix both components separately under vacuum with silica filler which has also been heated to 60 °C and thoroughly dried (drying of silica can be done at 150 - 200 °C for 24 hours in oven).

TECHNICAL DATA SHEET

This premixed resin and hardeners can be held for longer period of time at room temperature and blended with TA 7851 under vacuum in about 15 minutes at 80 °C in main mixer. Premix should be thoroughly stirred to get homogenous mass before pouring into preheated mould.

Processing properties of system (With accelerator TA 7851; 0.5 Pbw)

Property	Unit	Specification
Initial viscosity of mix	cPs / °C	1,000 / 80
Pot life of mix 5 kg	Hr / °C	1 / 80
Gel time	Min / °C	4 /140 3 /150 2 /160
Mould temperature	°C	120 - 160
APG processes	°C	80 - 100
Conventional vacuum casting	°C	80 - 100
Demolding time (depending upon mold temperature and casting volume)		
APG processes	Minutes	10 - 15
Conventional vacuum casting	Hrs	1 - 5
Vacuum required	mbar	0.5 - 1
Minimum post cure	Hrs / °C	10 / 140

Properties of casting

Property	Test method	Unit	Specification
Tensile strength	ISO 527	MPa	90 - 100
Tensile elongation at break	ISO 527	%	1.7 - 1.9
Flexural strength	ISO 178	MPa	150 - 165
Impact strength	ISO / R 179	KJ/M ²	8 - 9
Elastic modulus of tension	ISO 527	MPa	10,000 - 11,000
Deflection temperature (HDT)	ISO / R 75	°C	95 - 105
Density	DIN 55990	g / cm ³	1.7 - 1.8
Water absorption (60 x 10 x 4 mm) 23 °C/ 10 days	ISO / R 62	%	0.1 - 0.2
Dissipation factor 23 °C at 50 hz	IEC 60250	%	2
Arc resistance	ASTM D 495	Seconds	185 - 190
Comparative tracking index	IEC 60112	Volts	> 600
Electrical strength perpendicular (2 mm thick sheet)	IEC 60243-1	Kv / mm	19 - 22

Storage and handling

EPOTEC YDH 184, TH 7351, and TA 7851 can be stored up to 1 year in sealed original container. Storage condition below 15 °C may cause crystallization of the resin as well as hardener. Crystallization may be reversed completely by heating the material to 50 - 60 °C. It is advised to use resin and hardener only when they are clear and free from cloudiness.

It is also advised to follow standard procedures for handling chemicals. Contact with skin and eye may cause irritation and prolong, repetitive contact with skin may cause dermatitis.

Disclaimer

All recommendations for use of our products whether given by us in writing, verbally or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Although, the information contained in this sheet is accurate, no liability can be accepted in respect of such information. We warrant only that our product will meet the designated specifications and make no other warranty either express or implied, including any warranty of merchantability or fitness for a particular purpose as the conditions of application are beyond our control.

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