



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

EPOTEC YDC 6015 / TH 7652 P1 / TP 01

### Liquid Hot Curing EPOTEC Casting Resin System

<b>YDC 6015</b>	<b>100</b>	<b>Pbw</b>
<b>TH 7652P1</b>	<b>80</b>	<b>Pbw</b>
<b>TP 01</b>	<b>0-8</b>	<b>Pbw</b>
<b>Silica</b>	<b>320 - 350</b>	<b>Pbw</b>

#### Description

EPOTEC YDC 6015 is a liquid modified DGEBA resin suitable for electrical casting applications.

EPOTEC TH 7652 P1 is a liquid anhydride hardener and TP 01 is liquid flexibilizer, which can be added in appropriate ratio, upto 8 parts by weight.

When appropriate quantity of hardener, flexibilizer, and filler are mixed with resin and casted under vacuum, very good mechanical and electrical properties with high uniformity can be achieved. This system is also capable to exhibit good resistance to altering high and low temperature, mechanical and electrical stresses and has outstanding dimensional stability.

#### Processing

Recommended for APG and conventional vacuum casting.

#### Applications

Electrical insulation for medium and high voltage applications such as switchgear components, bushings, post insulators as well as instrument and dry type distribution transformers.

#### EPOTEC YDC 6015

Property	Test method	Unit	Specification
Appearance	VISUAL	-	Clear liquid
Viscosity @ 25 °C	JIS K 7233	cPs	4,600 - 5,400
Specific gravity @ 25 °C	TEC-AS-P-004	-	1.13 - 1.17

#### EPOTEC TH 7652 P1

Property	Test method	Unit	Specification
Appearance	VISUAL	-	Clear to pale yellow liquid
Viscosity @ 25 °C	JIS K 7233	cPs	50 - 150
Specific gravity @ 25 °C	TEC-AS-P-004	-	1.13 - 1.20

#### EPOTEC TP 01

Property	Test method	Unit	Specification
Appearance	Visual	-	Clear liquid
Viscosity @ 25 °C	JIS K 7233	cPs	60 - 100
Specific gravity @ 25 °C	TEC-AS-P-004	-	0.95 - 1.05

#### Casting mix preparation method

The resin and hardener are preheated at 60 °C and then mix both components separately under vacuum (recommended pressure, 1 to 5 mbar) 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). This premixed resin and hardeners can be held for one week at 60 °C. In order to prevent the sedimentation of filler during storage, intermittent mixing is recommended.

**Typical processing properties of system**

Mixing ratio: YDC 6015 / TH 7652P1 / TP 01 / Silica ; 100 / 80 / 7 / 350 Pbw

Property	Unit	Specification
Initial viscosity of mix	cPs / °C	20,000 / 60 3500 / 80
Pot life of mix	Days / °C	1 - 2 / 25
Mold temperature APG process CVC process	°C °C	130-160 70-100
Demolding time APG process CVC process	Minutes Hrs	10-40 4-8
Post cure condition APG process CVC process	Hrs / °C	5 / 140 8 / 140

**Typical properties of casting**

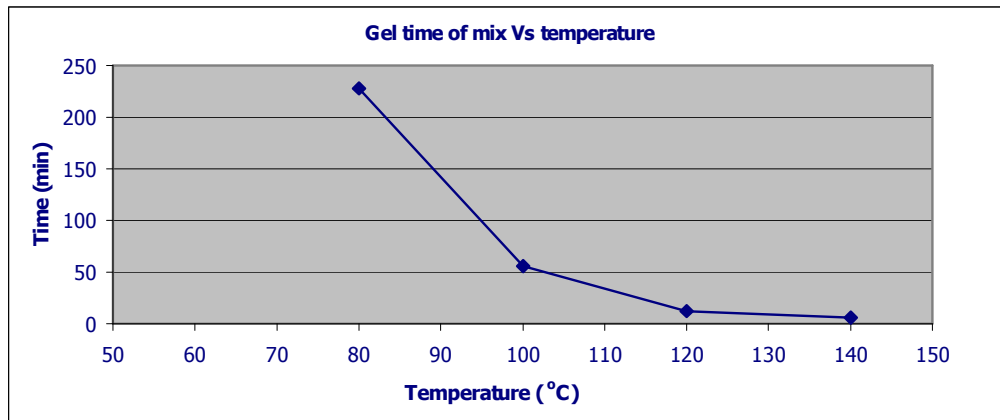
Mixing ratio: YDC 6015 / TH 7652P1 / TP 01 / Silica ; 100 / 80 / 7 / 350 Pbw

Curing : 10 hrs at 140°C

Property	Test method	Unit	Specification
Tensile strength	ISO 527	MPa	75 - 85
Tensile elongation at break	ISO 527	%	1.1- 1.3
Tensile modulus	ISO 527	MPa	10,000 - 12,000
Flexural strength	ISO 178	MPa	135 - 155
Flexural surface strain	ISO 178	%	1.5-1.8
Flexural modulus	ISO 178	MPa	10,400 - 12,000
Deflection temperature [HDT]	ISO/R 75	°C	80- 90
Glass transition temperature (DSC)	IEC 1006	°C	85 - 95
Volume resistivity at 25 °C	IEC 60093	Ohms-Cm	10 <sup>16</sup>
Dissipation factor 23 °C at 50 hz	IEC 60250	%	2 - 3
Dielectric constant at 23 °C	IEC 60250	-	4
Comparative tracking resistance	IEC 60112	Volts	> 600
Arc resistance	ASTM D 495	Sec.	180 - 190
Electrical strength Perpendicular (2 mm thick heat)	IEC 60243-1	KV / mm	17 - 21
Coefficient of linear thermal expansion, mean for 20 - 60 °C	DIN 53752	K <sup>-1</sup>	40 - 42 x 10 <sup>-6</sup>
Hardness, shore D	ISO 868	-	90 - 94
Density	DIN 55990	g / cm <sup>3</sup>	1.80 - 1.85
Water absorption, 10 days at 23 °C	ISO 62	%	0.1 - 0.2
Filler content	-	%	65

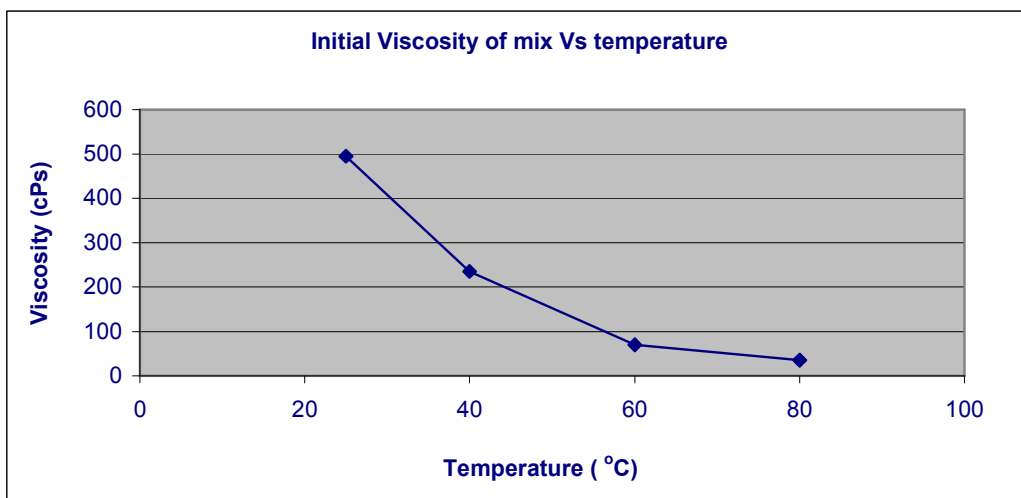
**Gel time data of mix ,YDC 6015 / TH 7652P1 / TP 01  
(Mixing ratio : 100 / 80 / 7 Pbw)**

Temp.( °C )	Gel time (min)
80	228
100	56
120	12
140	6

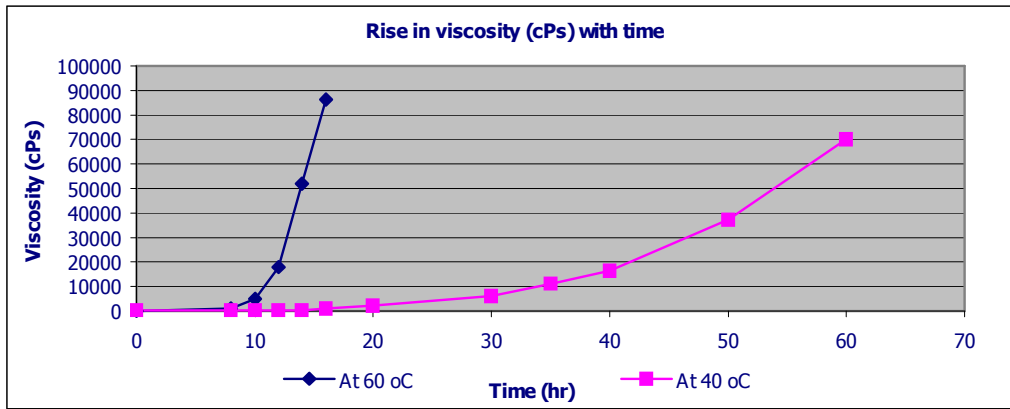


**Initial Viscosity of mix , YDC 6015 / TH 7652P1 / TP 01  
(Mixing ratio : 100 / 80 / 7 Pbw)**

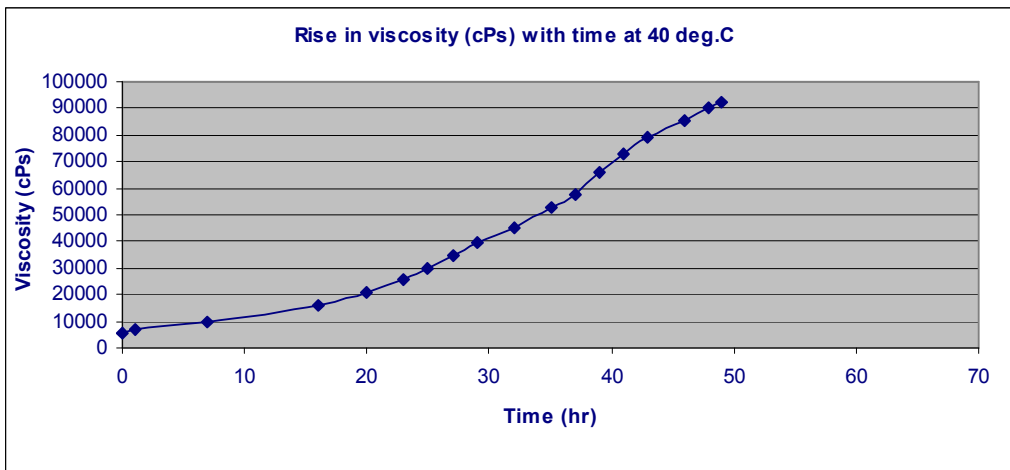
Initial Viscosity of mix Vs temperature	
Temp.( °C )	Viscosity (cPs)
25	480 - 510
40	225 - 245
60	60 - 80
80	30 - 40



**Reactivity data of mix ,YDC 6015 / TH 7652P1 / TP 01  
(Mixing ratio : 100 / 80 / 7 Pbw)**



**Reactivity data of mix ,YDC 6015 / TH 7652P1 / TP 01 / Silica  
( Mixing Ratio: 100 / 80 / 7 / 350 Pbw)**



**Storage and handling**

EPOTEC YDC 6015, TH 7652 P1 and TP 01 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.

Hardener TH 7652 P1 is sensitive to moisture thus partly emptied containers should be closed immediately after use. For handling and safety, please refer MSDS.

**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.

**For Additional Information, Please Contact:**

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