



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

EPOTEC YDC 6003 / TH 7658

**Liquid Hot Curing EPOTEC Casting Resin System****YDC 6003**                      **100 Pbw****TH 7658**                        **80 Pbw****Silica (300 mesh)**        **270 Pbw****Description**

EPOTEC YDC 6003 is liquid, unmodified, low molecular weight DGEBA resin designed for electrical applications.

EPOTEC TH 7658 is a liquid anhydride hardener. When appropriate quantity of hardener and filler are mixed with resin and casted under vacuum, very good mechanical and electrical properties with long term stresses, at temperature up to 90 °C can be achieved on casted components. Castings done by this system are suitable to use continuously for thermal class 'H'.

**Processing**

Recommended for automatic pressure gelation, pressure gelation, and vacuum castings.

**Applications**

Electrical insulation for medium and high voltage applications such as switchgear components and instrument and dry type transformers.

**EPOTEC YDC 6003**

Property	Test Method	Unit	Specification
Epoxy Equivalent Weight (EEW)	DIN 16945/4.15B (89)	g/eq	184 - 194
Viscosity* @ 25 °C	JIS K 7233 (89)	cPs	9,000 - 15,000
Color	ASTM D-1544 (89) TEC-AS-P-006	Gardner	Max 0.5
Specific gravity	TEC-AS-C-004	-	1.15 - 1.20

\*Brookfield viscosity

**EPOTEC TH 7658**

Property	Test Method	Unit	Specification
Appearance	ASTM D 4269	-	Clear liquid
Viscosity* @ 25 °C	JIS K 7233 (89)	cPs	250 - 450
Specific gravity @ 25 °C	TEC-AS-P-004	-	1.2

\*Brookfield viscosity

**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).

This premixed resin and hardeners can be held for longer period of time at room temperature and blended as and when required at 60 - 80 °C in mixer under vacuum. Premix should be thoroughly stirred to get homogenous mass before pouring into preheated mold.

Alternatively, resin, hardener and silica can be mixed together in main mixer at 60 °C under vacuum and allow to cool at room temperature immediately after homogeneous mixing. The mix prepared by this method can be stored for 2 days at 25 °C.

**Processing properties of system**

Property	Unit	Specification
Initial viscosity of mix @ 25 °C	cPs / °C	150,000 / 25 26,000 / 40 6,800 / 60 1,000 / 80
Gel time	Min / °C	285 / 80 14 / 120 5 / 140
Mould temperature APG processes Conventional vacuum casting	°C °C	120 - 180 80 - 100
Demolding time (depending upon mold temperature and casting volume) APG processes Conventional vacuum casting Vacuum	Minute Hr mbar	10 - 15 1 - 5 0.5 - 1.0
Minimum post cure	Hr / °C	10 / 130 6 / 140

**Properties of casting**

Property	Test Method	Unit	Specification
Tensile strength	ISO 527	MPa	70 - 80
Flexural strength	ISO 178	MPa	110 - 130
Impact strength	ISO / R 179	KJ/M <sup>2</sup>	7 - 10
Elastic modulus of tension	ISO 527	MPa	9,000 - 11,000
Deflection temperature (HDT)	ISO / R 75	°C	100 - 115
Coefficient of linear thermal expansion	DIN 53752	°K <sup>-1</sup>	32 - 34 x 10 <sup>-6</sup>
Thermal conductivity	ISO 8894-2	W / m.k	1.0
Water absorption (60 x 10 x 4 mm) 23 °C / 10 days	ISO / R 62	%	0.1 - 0.15
Dissipation factor 23 °C at 50 hz	IEC 60250	%	2.5
Comparative tracking index	IEC 60112	Volts	> 600
Electrical strength perpendicular (2 mm thick sheet)	IEC 60243-1	KV / mm	18 - 22

**Storage and handling**

EPOTEC YDC 6003, TH 7658 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 it is 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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