Potting Of Electronic Components

TECHNICAL SPECIFICATION

Burhani Resin EP- 60F and Hardener EH – 408

General Information:-

EP – 60F is a DGEBA type of Epoxy resin, suitably formulated and processed to obtain void free encapsulation and castings.

Hardener EH –408 is a Polyamide hardener.

Generally, it is used for adhesive, castings, encapsulation & potting of electronic components.

Properties of the resin EP - 60F:

Property.	Method.	Unit.	Specification.
Appearance.	Visual	------	Opaque, viscous liquid. (Green/Black)
Viscosity at 30° C By Din cup 10.	RPC/STP/009. Dt.10/05/2018.	Sec	30 - 40
Ash Content.	RPC/STP/010. Dt.10/05/2018.	%	49 -51
Specific gravity at 25° C.	RPC/STP/009. Dt.10/05/2018.	------	1.50 – 1.60
Flash Point		° C	>100
Storage stability.	when stored in original Containers atR.T	Months	12

Properties of the hardener EH – 408:-

Property.	Method.	Unit.	Specification.
Type of compound.	-----	-------	Polyamide.
Appearance.	Visual	------	**Amber coloured viscous liquid.**
Viscosity at 25° C By Brookfield.	RPC/STP/007. Dt.10/05/2018.	cps	200 - 600
Amine Value	RPC/STP/002. Dt.10/05/2018.	eq/kg.	348 - 404
Specific gravity at 25° C.	RPC/STP/009. Dt.10/05/2018.	------	0.94 – 0.96
Storage stability.	when stored in original Containers atR.T	Months	12

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Mix ratio and Pot life:

Property.	Method	Unit.	Observed Value.
Initial Mix Viscosity @ around 30°C. EP – 60F : EH – 408 100:25	RPC/STP/007. Dt.10/05/2018	cps	1600
Pot life at R.T	RPC/STP/008. Dt.10/05/2018	Minutes	120 - 160
Curing in thick layer.	Mix ratio 100:25	-------	Tack free & Hard mass.

Curing Schedule:

Curing Temperature °C	20	30	40
Curing Time	48hrs	24hrs	16-20 hrs

Post Curing: 4 - 6 Hrs at 80°C if necessary.

Typical properties of cured compound:

Specimen Cured at 16 hours at RT and 4 hours at 80°C.

S.No	Property	Method	Unit.	Observed value.
1.	Flexural Strength	ISO -178	MPa.	36.5
2.	Izod impact strength (un notched)	ISO – 179	Kj/m²	10.36
3.	Compressive strength	ISO - 604	MPa	69
4.	Tensile strength Test speed: 5mm/min	ISO - 527	MPa	27.5
5.	Hardness	ISO - 868	Shore D	79
6.	Heat Distortion Temperature.(Martens)		°C	Under study
7.	Co-efficient of linear thermal expansion (CLTE) 30 - 60°C	ASTM D - 696	/ °C	4.20 x 10¯ 5
8.	Thermal conductivity @55°Cmean temperature	ASTM E - 1530	W/mk	0.401
9.	Di electric strength @RT	ASTM D - 149	kV/mm	14.2
10.	Volume resistivity @ DC 500 V for l minute	ASTM D - 257	Ohms - cm	1.3 x 10¹
11.	Dielectric constant @ 1 KHz RT	ASTM D - 150	-----	2.92
12.	Dissipation factor @ 1 KHz RT	ASTM D - 150	-----	0.0290099
13.	Comparative tracking index @ RT	ASTM D - 3638	V	Greater than 600

Chemical Resistance:

S.No	Chemical	Method	Unit.	Observed value.
1.	25% H2 SO4 @RT (24hours) a) Weight change b) Dimensional change c) Visual appearance	ISO – 175	%	+ 0.55 Nil No discoloration , no delamination and deformation is observed.
2.	5% NaOH @RT (24hours) a) Weight change b) Dimensional change c) Visual appearance	ISO – 175	%	+ 0.24 Nil No discoloration , no delamination and deformation is observed.

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SAFETY PRECAUTIONS: Avoid direct contact of resin/ hardener with skin. Use of hand gloves during handling is recommended. Splashes on the skin, if any should be removed immediately with suitable remover.

Note:- The information given here reflects our present experience in development and usage. Since site conditions and situations vary, no warranty is given or responsibility assumed for obtaining specific technical results.

For further technical information and specific queries, please feel free to contact our Technical Cell at: