



An ISO 9001:2015 Certified Company



JYOTI

ENTERPRISE

MFG. OF : ALL TYPE OF INSULATING VARNISHES, THINNERS, EPOXY, PU RESIN & ALLIED PRODUCTS.

63, 64, Sahitya Industrial Hub, Part-1, Nr. Shyam Estate, Bakroi-Gatrad Road, Bakrol Bujrang, Ta. Daskroi, Dist. Ahmedabad-382430.

M. : +91 8347060250 | M. : +91 9825890317 | +91 9376158622 | +91 9601251841 | E-mail : jyotienterprise2003@gmail.com | Website : www.jyotienterprise.net

TDS OF JYOTI 14401 & HARDENER 1200

Description

JYOTI 14401/ JYOTI Hardener 1200 is a two component, room temperature curing, polyurethane based casting resin system. JYOTI 14401 is a filled solventless, reddish brown coloured resin. JYOTI Hardener 1200 is an aromatic isocyanate. Resin & hardener components on mixing cures by a polyaddition reaction at room temperature & gives flexible cured mass.

Areas of Application

Casting, potting and encapsulation of electrical & electronic components.

Sealing of cable Joint on low & high voltage cables. JYOTI 14401 particularly has improved adhesion for cross linked polyethylene (XL PE) cables.

Properties of cured material

JYOTI 14401 + H 1200 cures with low volume shrinkage and low exotherm to give a stress-free cured mass. The elasticity of the cured casting resin produces extremely favourable temperature cycling behavior. The cured casting resin is further distinguished by good resistance to tracking. The resin system is suitable for use in electrical components working up to 120°C(Class E)

Application Method

The resin component JYOTI 14401 should be first stirred, since the filler on long storage has settling tendency. JYOTI 14401 & JYOTI Hardener 1200 should then be mixed in recommended proportion at room temperature (20 - 40°C) and used for casting or potting, within the potlife (usable life of mixture) JYOTI 14401 + JYOTI Hardener 1200 is a fast reactive system hence has limited pot life.

Properties of JYOTI 14401 as supplied:

Colour & Appearance [*]	DBI 1001 [**]		Reddish brown opaque viscous
Viscosity at 25°C by (Brookfield) [*]	DBI 3005[**]	mPa.s	3000 - 7000
Density at 25°C	DBI 3047[**]	g/ml	1.28 – 1.33
Curing in thick layer 10g/25°C/24h	DBI 3016		Tackfree, Free from pin holes
Ash content [*]	DBI 1017 [**]	%	34 -38
Storage stability [*]	When stored in original sealed container at R.T.	months	9

[*] These properties form our sales specification

[**] DBI are our internal test methods and are available on request



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Properties of JYOTI Hardener 1200 as supplied:

Chemical Base			Modified aromatic isocyanate
Colour & Appearance [*]	DBI 1001 [**]		Dark Brown clear
Viscosity at 25°C by (Brookfield) [*]	DBI 3005[**]	mPa.s	100 - 300
Flash point	DIN 51584 (Open cup)	°C	>100
Storage stability [*]	When stored in original sealed container at R.T.	months	9

Mixing Proportion & Pot Life:

Mixing Ratio (Resin: Hardener.)		Parts by weight	100 : 27 ± 2
Initial Viscosity of mixture at 25 °C	DBI 3005 [**]	mPa.s	1540 (typical)
Pot life at 25°C [*]	DBI 1019 [**]	minutes	10-20
Temperature rise at 25 °C (exothermal)		°C	< 40 (typical)

Recommended Curing Cycle:

24 hrs at RT (25 - 40 °C)

Alternatively the potted components can be cured for 4 hours at room temperature followed by 2-4 hours at 80 °C. The curing time is after the component or mould attains specified temperature. Time required to heat up moulds, etc. should be added in the above suggested curing time.

Cured Film Mechanical Properties (Typical):

Specimen cured for 16 h at R.T + 4h at 80°C

Flexural strength	ISO 178	MPa	Flexible
Impact strength (Unnotched)	ISO 179	kJ/m ²	>25
Compressive Strength	ISO 604	MPa	NT
Tensile strength	ISO 527	MPa	3
Hardness	ISO 868	Shore A	80 - 90
Elongation at break	ISO 527	%	30-35
Water absorption	ISO 62	%	0.21
Density at 25 °C	IEC 60455	g/cm ³	1.31
Thermal conductivity	ASTM C 518	W/mK	0.5



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Dielectric Properties:

Specimen cured for 16 h at R.T + 4h at 80°C

Dielectric strength as per IEC 60243 with 3 mm specimen	at RT	kV/mm	17
Volume resistivity at 500 V DC as per IEC 60455-2	at RT	ohm.cm	10 ¹⁴ NT
Dielectric constant at 30 V/1 kHz as per IEC 60455-2	at RT at 155 °C	-	NT NT
Dielectric loss factor 30 V/1 kHz as per IEC 60455-2	at RT at 130 °C	-	0.054 0.285
Track resistance by IEC 60112	at RT	Volts	>600
Arc resistance	ASTMD-495	sec	130

Resistance against solvents & chemicals:

Solvent resistance as per IEC 60455-2	25% H ₂ SO ₄	No Change in colour	-
	5% NaOH	No Change in colour	-

Packaging:

Both JYOTI 14401 and JYOTI Hardener 1200 have tendency to absorb moisture when left open to atmosphere. Necessary care should be taken to avoid moisture absorption once the originally sealed container is opened, lid of the container should be tightly fitted to avoid moisture ingress in container. The sealed containers should be stored in covered godown away from direct sunlight and rain water.

JYOTI 14401 : 20 in polycontainers.

JYOTI Hardener 1200: 1 kg, 5 kg. & 25 kg polyethylene containers.

Safe Handling:

JYOTI 14401 has hardly any effect on skin and mucous membrane. JYOTI Hardener 1200 has vapours result in irritation to mucous membrane and eyes. Its direct contact with skin can cause dermatitis associated with slight swelling and itching or irritation. Direct contact with hardener as well as resin- hardener mix should be avoided by using necessary hand gloves. Any area of skin affected should be scrubbed with 5% acetic acid and washed well with plenty of water. For detailed information on processing, kindly refer to our Technical Information "Safe Processing with Resins and Hardener". & material safety data sheet of JYOTI 14401 & JYOTI Hardener 1200.

Disclaimer

This information is intended only for general guidance in the application of our product. It has been obtained by careful investigation and represents the present state of our knowledge and experience. Because of the large number of possible methods of application and processing we are not able to assume responsibility in any one particular case for either the technical results or the patent rights situation applicable to the country under consideration.