



KISHIMOTO SANGYO CO., LTD. FP TEAM

OVERSEAS OFFICES

NEW YORK, SANTA CLARA, SAOPAULO, DUSSELDORF, TAIPEI, SINGAPORE  
BANGKOK, KUALALUMPUR, HONGKONG, SHANGHAI, DALIAN

Developing innovative advanced materials and technologies for the future.

## One-Component Epoxy Resin of Epi Fine 4616 series

### DESCRIPTION

EpiFine 4616 series consist of one-component epoxy resin, which is, designed for high reliability relay parts applications. This product also finds utility in such micro electronic applications as sensors, switches, and ceramic filters.

In the market place there are several weakness of one-component epoxy resin for relay parts. Some of the issues associated with these types are as follows.

- It needs to be stored under refrigerated conditions.
- There is much out gassing and shrinkage while thermal curing.
- Poor adhesive force. Easy to remove from plastics such as PC, PBT, and LCP.
- Difficult to control flow length.
- Uncured in small gaps due to separation of resin and hardener by capillary action.
- Low C.T.I. (Comparative Tracking Index) value.

Kisco has developed a new product EpiFine 4616 series, which is over comes the above problems. EpiFine series was especially formulated for the micro relay.

### FEATURES

- ✓ Active post 30 days at 40 degree C.
- ✓ No organic gas generated during reaction.
- ✓ Excellent surface adhesion between plastics and epoxy resin.
- ✓ Good heat and chemical resistance.
- ✓ Controlled epoxy flow characters.
- ✓ Over 560V for C.T.I value (IEC 112).

### BENEFITS

- Long lifetime.
- Contamination is eliminated.
- Complete seal.
- Device protection.
- Device protection.
- Excellent reliability

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### **PROCESS CONDITIONS**

EpiFine 4616 series is set to gel within 5.5 minutes at 100 degree C. Total time for hardening to occur is 30 minutes at 120 degree C.

### **INSTRUCTIONS**

- ✓ Remove oil or water on the glue line. Make sure to clean before you start processing.
- ✓ This product may cause skin irritation in sensitive person. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to Material Safety Data Sheet for more details.

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## EpiFine 4616-60 K

EpiFine 4616-60K, a one-component epoxy adhesive is designed specifically for relay sealing. It's provides strong bonds to engineering plastics.

### General Characters

Appearance	Viscosity	Thixotropic Factor	Specific Gravity
Black , thixotropic liquid	40,000 mPa· s.	2.3	1.3

### Storage and cure condition.

Storage Life	25 degree C	3 months
	40 degree C	1 month
Gel time	100 degree C	5.5 minutes
Recommended cure condition	120 degree C	30 minutes

### Cured property

Item	Typical Values	Test Method
Hardness	88	Shore D
Bending strength	85	MPa
Glass transition temperature	118	Degree C
Thermal expansion	$7.5 \times 10^{-5}$	TMA
Water absorption	0.5	Weight % / Boiled 1 hour
C.T.I. Value	570	Voltage / IEC
Bonding strength	10	Mpa / Fe +Fe

The figures shown above are typical values only.

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Fine Polymers Corporation provides as following grades. Basic chemical characters are same as EpiFine 4616-60K.

\*Special grade for surface mount device is not included. Please contact with our sales office for SMD application.

	Viscosity Rotational viscometer type B	Thixotropic Factor	Flow distance
<b>EpiFine 4616-30K</b>	25,000	1.7	40-70mm
<b>EpiFine 4616-40K</b>	30,000	2.0	20-40mm
<b>EpiFine 4616-50K</b>	33,000	2.2	15-35mm
<b>EpiFine 4616-60K</b>	40,000	2.3	12-25mm
<b>EpiFine 4616-30</b>	43,000	2.8	10-14mm
<b>EpiFine 4616-40</b>	70,000	3.8	8-10mm

NOTE

All statements, technical information and recommendations contained herein are based on tests we believe to be accurate, but the accuracy or completeness thereof is not guaranteed.

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