



EPIREZ

TECHNICAL DATA

Epoxy Impregnant Compound

Epirez 9049

Description

Epoxy Impregnant Compound is a 100% solids, one-pot epoxy impregnant for armatures, transformers and similar components. Components impregnated with Epoxy Impregnant Compound withstand temperatures in excess of the breakdown point of electrical varnishes.

Epoxy Impregnant Compound contains no solvents; hardening is a result of a chemical reaction promoted by a baking cycle. As there is no solvent evaporation, voiding is eliminated, and shrinkage does not occur.

Areas of application

- Impregnation of motor windings
- Impregnation of armatures
- High temperature adhesive
- Electrical sealant

Features

- Single component
- High temperature resistance
- Solvent free
- Heat cured
- Excellent dielectric strength
- Good chemical resistance
- Controllable cure time
- High mechanical properties

The information contained in this Technical Bulletin is as up to date and correct as possible as at the time of issue. The data provided should be used as a guide only as the performance of the product will vary depending on differing operating conditions and application methods.

The sale of any product described in this Technical Bulletin will be in accordance with ITW Polymers & Fluids Conditions Of Sale, a copy of which is available on request. To the extent permitted by law, ITW Polymers & Fluids excludes all other warranties in relation to this product.

General properties

Shelf Life	: 6 months at 17°C or below
Appearance	: Amber Liquid
Maximum Casting Thickness	: 20 mm
Solids Content	: 100%
Flexural Strength	: 86 MPa
Compressive Yield Strength	: 113 MPa
Dielectric Strength	: 180 kV/cm
Surface Resistivity	: 8×10^{13} ohm.m
Volume Resistivity	: 1.5×10^{14} ohm.cm
Maximum Operating Temperature	: 165°C
Heat Deflection Temperature	: 155°C
Dissipation Factor	: 0.0031 at 60 Hz, 25°C
Power Factor	: 0.0009 at 60 Hz, 25°C
Dielectric Constant	: 3.4 at 60 Hz, 25°C
Water Absorption	: Less than 0.1% at 7 days, 100°C

Estimating data

4 Litres Epoxy Impregnant Compound = 0.2 m^2 at 20mm

Application Directions

Typical Cure Characteristics

Temperature	Work Time	Gel Time	Cure Time
25°C	6 months	24 months	Incomplete Cure
60°C	3 days	12 days	Incomplete Cure
65°C	2 days	8 days	Incomplete Cure
80°C	9 hours	36 hours	Incomplete Cure
95°C	3 hours	12 hours	Incomplete Cure
125°C	42 minutes	1 hour	6 hours
130°C	30 minutes	45 minutes	4 hours
140°C	12 minutes	15 minutes	2 hours
150°C	9 minutes	10 minutes	1 hour

Caution: Each heating period has a cumulative effect.

Dip Impregnation

Some experimentation will be necessary to develop the most suitable technique for a given application. The basic procedure is as follows:

Preheat the component to a temperature found to provide the desired coating thickness. Slowly immerse the hot component into the **Epoxy Impregnant Compound** and allow to remain submerged. Remove, allow to drain and transfer to the oven for cure. As the temperature increase in the dipping tank, the viscosity of the **Epoxy Impregnant Compound** is lowered and its ability to penetrate windings increases. However, if the temperature rise is maintained, the curing process will commence in the dipping tank and the viscosity will rise. From the table determine the pot-life at the actual tank temperature. The use of large tanks reduces temperature rise. Replenishment with fresh **Epoxy Impregnant Compound** will rejuvenate the contents to maintain a constant 'age'.

AUSTRALIA

ITW Polymers & Fluids
100 Hassall Street
Wetherill Park NSW 2164
Phone (02) 9757 8800 Fax (02) 9757 3855

NEW ZEALAND

ITW Polymers & Fluids
18-26 Amelia Earhart Avenue
Airport Oaks, Mangere, Auckland
Phone (09) 256 2122 Fax (09) 256 2124

Trickle Impregnation

This method uses radiant heat to maintain a slowly rotating (20 rpm) armature at 130°C. The axis of the armature is at 20° to the horizontal (70° from the vertical) and the **Epoxy Impregnant Compound** is fed into the windings from behind the commutator. Continue heating until fully cured.

Varnishing of large Stators

Large wire-wound stator units are best treated by resistance heating the windings using approximately half the rate voltage. Temperature in the windings should not exceed 150°C, and a suitable thermometer should be used. **Epoxy Impregnant Compound** is poured over the windings on the coil head until it drips out at the connector end which is down side. The procedure is repeated with the coil head down side. Drippings should be brushed onto the connector end.

The bore of the stator is now wiped completely clean and the power left on until the **Epoxy Impregnant Compound** has cured. Felt coverings will hold heat in to effect cure of lead wires and sleeving areas.

Caution

Baking temperatures used with **Epoxy Impregnant Compound** may cause damage to thermoplastic wire coatings, particularly in the case of fine wires under appreciable tension. Each user should satisfy himself regarding the suitability of their winding techniques and the grade of wire being used before large scale usage of **Epoxy Impregnant Compound**.

Cleaning

Tools and equipment may be cleaned before hardening commences by washing with **Epirez Clean Up Solvent**. Do not use for cleaning hands or mixing with product.

Limitations

Epoxy Impregnant Compound should not be applied at temperatures below 10°C.

Storage and shelf life

Store in dry conditions below 17°C, away from sources of heat and naked flames. Protect from frost. When stored in original sealed containers the minimum shelf life is 6 months.

Packaging

Epoxy Impregnant Compound is available in 4 Litre packs. Each pack contains Hardener and Compound in the correct proportions for use.

Ordering Information:

4 Ltr #990492

Safety precautions

Avoid contact with skin and avoid breathing vapour. Wear gloves and goggles when mixing and using. Keep away from children. Provide adequate ventilation if applied in confined spaces. If poisoning occurs call Doctor or Poisons Information Centre. If swallowed **DO NOT** induce vomiting. Give plenty of water or milk. If skin contact occurs remove any contaminated clothing and wash affected areas thoroughly with soap and water.

AUSTRALIA

ITW Polymers & Fluids
100 Hassall Street
Wetherill Park NSW 2164
Phone (02) 9757 8800 Fax (02) 9757 3855

NEW ZEALAND

ITW Polymers & Fluids
18-26 Amelia Earhart Avenue
Airport Oaks, Mangere, Auckland
Phone (09) 256 2122 Fax (09) 256 2124

TDG Code: UN 1760

Note

The figures quoted for work time, cure time and casting thickness are not definitive. They are dependent on job site conditions and will vary accordingly. In all cases we endeavour to provide typical figures for use as a guide.

Health & Safety Information

The product is hazardous. A Material Safety Data Sheet is available from the ITW Polymers & Fluids Technical Department upon request or available on our website www.epirez.com.au.

AUSTRALIA

ITW Polymers & Fluids
100 Hassall Street
Wetherill Park NSW 2164
Phone (02) 9757 8800 Fax (02) 9757 3855

NEW ZEALAND

ITW Polymers & Fluids
18-26 Amelia Earhart Avenue
Airport Oaks, Mangere, Auckland
Phone (09) 256 2122 Fax (09) 256 2124