

Polytec EP 642

Properties

Polytec EP 642 is a 100% solid, two-component, medium viscosity, high T_g , high temperature resistant epoxy.

It has an excellent chemical and moisture resistance and can withstand operating temperatures up to 350°C (intermittent). Suitable for fiber optic, medical, sensor and electronic assembly applications.

Polytec EP 642 has excellent adhesion to glass, ceramic, ferrous and non-ferrous metals, most plastics and silicon. Compatible with STERRAD® NX sterilization systems and autoclavable.

The material can be applied via dispensing, jet-dispensing and manual application.



Processing

- For two-component products the components A and B should be mixed carefully within the specified mixing ratio.
- For filled products both components should be homogenized carefully prior mixing, in order to prevent a possible settling of the filler.
- Processing should be carried out rapidly after mixing the components; as an indication the pot life can be used.
- Surfaces should be clean, thus free of dirt, grease, oil, dust or process chemicals.
- One-component products can be applied directly and are not subject to a pot life (except pre-mixed/frozen products).
- Please take notice of respective minimum curing temperature and time.
- For Safety information please refer to the respective Material Safety Data Sheet.

Polytec EP 642

Unfilled Epoxy Adhesive

Technical Data

Polytec EP 642

| Properties in uncured state | Method | Unit | Technical Data |
|---------------------------------------------|----------|-------------------|----------------|
| Chemical basis | - | - | Epoxy |
| No. of components | - | - | 2 |
| Mixing ratio (weight) | - | - | 100:5 |
| Mixing ratio (volume) | - | - | - |
| Pot life at 23°C | TM 702 | h | 24 - 36 |
| Storage Stability at 23°C | TM 701 | Months | 12 |
| Consistency | TM 101 | - | Flowable paste |
| Density Mix | TM 201.2 | g/cm ³ | 1.10 |
| Density A-Part | TM 201.2 | g/cm ³ | 1.20 |
| Density B-Part | TM 201.2 | g/cm ³ | 1.05 |
| Viscosity Mix 84 s ⁻¹ at 23°C | TM 202.1 | mPa·s | 10 000 |
| Viscosity A-Part 84 s ⁻¹ at 23°C | TM 202.1 | mPa·s | - |
| Viscosity B-Part 84 s ⁻¹ at 23°C | TM 202.1 | mPa·s | - |

| Properties in cured* state | Method | Unit | Technical Data |
|-----------------------------------------------------|----------------|-------------------|----------------|
| Color | TM 101 | - | Yellow/ amber |
| Hardness (Shore D) | DIN EN ISO 868 | - | 85 |
| Temperature resistance continuous | TM 302 | °C | -55 / +250 |
| Temperature resistance short term | TM 302 | °C | -55 / +350 |
| Degradation Temperature | TM 302 | °C | +410 |
| Glass Transition Temperature (T _g) | TM 501 | °C | 150 |
| Coefficient of thermal expansion (<T _g) | ISO 11359-2 | ppm | - |
| Coefficient of thermal expansion (>T _g) | ISO 11359-2 | ppm | - |
| Thermal conductivity | - | W/m·K | - |
| Elasticity modulus | TM 605 | N/mm ² | 1 600 |
| Tensile Strength | TM 605 | N/mm ² | 51 |
| Lap shear strength (Al/Al) | TM 604 | N/mm ² | 14 |
| Elongation at break | TM 605 | % | 4.2 |
| Water absorption 24 h, 23°C | TM 301 | % | 0.3 |
| Refractive index | - | - | - |

*The above data has been determined with samples cured at 150°C. Please notice, by varying the curing temperature these properties can be influenced to some extend.

Polytec EP 642

| Curing* | Method | Unit | Technical Data |
|----------------------------|--------|------|----------------|
| Minimum curing temperature | | °C | - |
| Curing time at 23°C | | h | - |
| Curing time at 70°C | | h | - |
| Curing time at 150°C | | min | - |
| Curing time at 180°C | | min | 15 |

*Curing temperatures refer to the temperature in the respective bond line. When choosing the respective curing conditions, the time needed to heat the substrate has to be considered. Depending on the type of heat source (convection oven, hot stamp, heating plate) the heat input may vary.

Standard pack sizes:

250 g, 500 g

1 kg

Customized packaging

Please note:

The above listed information are typical data based on tests and are believed to be accurate. Polytec PT makes no warranties (expressed or implied) as to their accuracy. The above listed data do not constitute specifications. The processing (in particular the cure conditions) of the material, the process control and the variety of different applications at various customers are not under Polytec PT's control. Therefore Polytec PT will not be liable for concrete results in any specific application or in any connection with the use of this product. In particular the cure conditions do have a major effect on the properties of the cured material. Therefore it is highly recommended to keep the cure schedule – once established - under tight control. With the release of this data sheet all former data sheets will be null and void.

Subject to alteration.

Polytec PT GmbH
Polymere Technologien
Ettlinger Straße 30
76307 Karlsbad
Germany
Tel. +49 (0) 7243 604-4000
Fax +49 (0) 7243 604-4200
info@polytec-pt.de
<http://www.polytec-pt.de>

Polytec France S.A.S.
TECHNOSUD II
Bâtiment A
99, Rue Pierre Semard
92320 Châtillon - France
Phone. +33 (0)1 49 65 69 00
Fax +33 (0)1 57 19 59 60
info@polytec.fr
<http://www.polytec-pt.com>

Polytec South-East Asia Pte Ltd
Blk 4010 Ang Mo Kio Ave 10
#06-06 Techplace I
Singapore 569626
Tel. +65 6451 0886
Fax +65 6451 0822
info@polytec-sea.com
<http://www.polytec-pt.com>