

ThreeBond 2210

One-component Epoxy Resin

With the trend of an increasing miniaturization and reduction of weight and at the same time an increase of the performance of electric and mechanical component parts, also the requirements regarding the chemical, thermal and physical properties of sealing compounds are getting more demanding. In addition to this, there is a growing demand for excellent handling in order to be able to also use them for the automation in assembly technics and consequently for the acceleration of the manufacturing process. ThreeBond 2210 has been developed with a view to meet these requirements.

1. Features

- Extremely simple application by means of automatic dispensing systems as the product is one-component and free from solvents (no weighing, stirring or mixing required).
- The fast curing of the resin allows considerable energy savings and facilitates the automation of assembly works thus enabling an integration of On-Line manufacturing processes without requiring manual works.
- As the resin contains more than 99.5 % of nonvolatile matters, there is only a minimal shrinkage and outgassing while curing.
- The cured resin excels in excellent electric properties as well as in a great solidity and very good chemical resistance.
- Excellent for fastening and sealing electric and electronic component parts such as relays, sensors, coils, microchips, switches, terminals, etc.

2. Properties before Curing

| Properties | Result | Unit |
|----------------------------------|-----------------|-------------------|
| Appearance | Black / Viscous | |
| Viscosity at 25°C | 8 | Pa·s |
| Density at 25°C | 1.19 | g/cm ³ |
| Grain size of hardener particles | < 100 | µm |
| Thixotropic Index (4 : 20 rpm) | 1.1 | |
| Curing time at 90°C | 30 | min |
| 100°C | 20 | min |
| 120°C | 10 | min |
| Shelf life at 25°C | 4 | months |
| 5°C | 7 | months |

3. Properties after Curing

| Properties | Result | Unit |
|--|----------------------|------------------|
| Shore- Hardness | 92 D | |
| Shear strength Fe/Fe at 25°C | 14.7 | MPa |
| at 100°C | 14.7 | MPa |
| at 150°C | 3.4 | MPa |
| Glass transition temperature | 120 | °C |
| Coefficient of thermal expansion | 7.5×10^{-5} | °C ⁻¹ |
| Water absorption (100°C x 1 h) | + 0.52 | % |
| Pressure cooker (121°C x 72 h) | + 2.2 | % |
| Volume resistivity | 1.5×10^{14} | Ω·m |
| Dielectric constant at 1 MHz | 3.4 | |
| Dielectric dissipation factor at 1 MHz | 0.020 | |
| Breakdown voltage | 23 | MV/m |
| Arc resistance | 138 | s |

4. Instructions

- Keep the epoxy resin tightly closed in the original container and store it in a dark, dry, sufficiently ventilated and cool place at 5 ~ 25°C.
- Before opening the container let the product reach room temperature as otherwise the formation of dew would be resulting.
- In order to obtain optimal results remove humidity, fat and other impurities from the fitting surface.
- According to the nature of the joints (width, surface roughness, unevennesses) apply an appropriate quantity of epoxy resin uniformly on one of the fitting surfaces and join the parts immediately, position them correctly and fix them.
- The degree of curing varies depending on the thickness of the coating, the ambient temperature and the duration of the process.
- When a precision resin is used, changes in viscosity versus the ambient temperature are to be verified.
- Resin once transferred into another container should not be returned to the original container. Excess sealant can be easily wiped off with a cloth.

5. Packing

1 kg cans (special packing on request)

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