

Technical Datasheet

Penloc® GTI-Clear



Product Description

The methacrylic-based high-performance structural adhesives of the Penloc® GTx series are two-component adhesives. They are ideal for bonding materials such as metal, glass, ceramics, wood and many plastics (except PE and PP). The Penloc® GTx adhesives are easy to handle and versatile in use.

Penloc® GTI-Clear is a 2K high-performance methacrylic-based structural adhesive. Penloc® GTI-Clear is characterized by high transparency, excellent flexibility, high power transmission and good temperature resistance. Penloc® GTI-Clear should be processed with a micro-static mixer, otherwise colour differences may occur in the edge area of the bonding.

Curing Properties

This product is a two-component adhesive. The adhesive can be cured at room temperature or thermally with the addition of heat after mixing the two components in the ratio indicated. Possible curing temperatures are listed in the table below.

The adhesive can be applied after mixing the components within the pot life. To determine the pot life, the time it takes to double the increase in viscosity after mixing of the two components is used.

Curing	Time
Pot life	3 min 20 sec
Mixing ratio	1:1
Handling strength	5 - 7 min
Full strength	4 -6 Stunden

Technical Data

Resin methacrylate
Appearance transparent

Uncured material

Viscosity [mPas] (Brookfield LVT, 25°C, Sp 4, 30rpm) <i>PE-Norm 001</i>	5 000 - 6 000
Density [g/cm ³] <i>PE-Norm 004</i>	1,2
Flash point [°C] <i>PE-Norm 050</i>	>15

Cured material

Hardness shore D <i>PE-Norm 006</i>	45 - 55
Temperature resistance [°C]	-40 - 120
Water absorption [mass %] <i>PE-Norm 016</i>	<8

Technical Datasheet

Penloc[®] GTI-Clear



Glass transition temperature DSC [°C] <i>PE-Norm 009</i>	50 - 55
Coefficient of thermal expansion [ppm/K] below Tg <i>PE-Norm 017</i>	22
Coefficient of thermal expansion [ppm/K] above Tg <i>PE-Norm 017</i>	253

Young's modulus E [MPa] <i>PE-Norm 056</i>	462
Tensile strength [MPa] <i>PE-Norm 014</i>	8
Elongation at break [%] <i>PE-Norm 014</i>	25
Lap shear strength (steel/steel) [MPa]	20
Lap shear strength (Al/Al) [MPa]	18
Lap shear strength (PC/PC) [MPa]	*5
Lap shear strength (PMMA/PMMA) [MPa]	*3
Lap shear strength (FR4/FR4) [MPa]	19

* substrate failure

Transport/Storage/Shelf Life

Trading unit	Transport	Storage	Shelf-life*
Cartridge	at room temperature max. 25°C	at room temperature max. 25°C	at delivery min. 4,5 months; max. 9 months
Other packages			

***Store in original, unopened containers!**

Instructions for Use

Surface preparation

The surfaces to be bonded should be free of dust, oil, grease or other dirt in order to obtain an optimal and reproducible bond.

For cleaning we recommend the cleaner IPA[®]. Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pretreated in order to achieve sufficient adhesion.

Application

Technical Datasheet

Penloc[®] GTI-Clear



Our products are supplied ready to use. Depending on packaging they can be applied by hand directly from the container or semi or fully automatically. With automated application from the cartridge the adhesive is conveyed by a compressed air-operated displacement plunger via a valve in the needle.

The cartridge must be raised 2 minutes vertically (tip up) before opening, to allow trapped air to rise. The cap should be kept for reclosure. In the case of black cartridges, the shutter must be pitched vertically and firmly on a hard surface. Two pins are drilled into the dosing channels.

With the dosage "bead on bead", both components are dosed separately by uniform pressure on the die. When dosing with a "Microstatic Mixer", both components are premixed.

Adhesive and substrate may not be cold and must be warmed up to room temperature prior to processing. After application, bonding of the parts should be done quickly.

For safety information refer to our safety data sheet.

Disclaimer

The product is free of heavy metals, PFOS and Phthalates and is conform to the EU-Directive 2017/2102/EU "RoHS III".

THE VALUES NOTED IN THIS TECHNICAL DATA SHEET ARE TYPICAL PROPERTIES AND ARE NOT MEANT TO BE USED AS PRODUCT SPECIFICATIONS.

The information contained in this data sheet is believed to be accurate and is provided for information only. Eurobond Adhesives Ltd makes no representation or warranties of any kind concerning this information. It is the user's responsibility to determine the suitability of this product for any intended use. Eurobond Adhesives Ltd does not assume responsibility for test or performance results obtained by the user. The user assumes all risk and liability connected with the use of this product.

The user should adopt such precautions and use guidelines as may be advisable for the protection of property and persons against any hazards that may be involved in this product's handling or use. Eurobond Adhesives Ltd specifically disclaims any liability for consequential or incidental damages of any kind arising from the handling or use of this product. The information contained in this Technical Data Sheet offers no assurance that the product use, application, or process will not infringe on existing patents or licenses of others.

