

# Technical Datasheet

## Penloc® GTR-VT



### Product Description

**Modified acrylate | 2 part | solvent-free | room temperature**

- ▶ Bonding materials such as metal, glass, ceramics, wood and many plastics (except PE and PP)
- ▶ Suitable for hard, non-porous materials
- ▶ Flexible and low odor
- ▶ High power transmission, temperature resistance and high flame point
- ▶ High flame point

### Curing Properties

This product is a two-component adhesive. The adhesive can be applied after mixing the two components in their appropriate ratios. All two-component adhesives have a determined pot life. Consideration should be given to the amount of adhesive that is mixed, as it must be applied within the noted pot life for optimal dispensing and assembly.

Mixing ratio	Pot life
1:1	3 min

This adhesive can be cured at room temperature. Typical curing parameters are listed in the table below.

Curing	Time
Handling strength	5 min
Final strength	4 h

The curing times are only provided as a guideline. They are derived from curing a 2g adhesive sample without affixed substrates in a laboratory environment. Actual cure times can vary based on part size, configuration, adhesive volume, temperature control.

### Technical Data

Resin	Methacrylate
Appearance part A	Yellowish
Appearance part B	Blue
Appearance mix	Green

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Uncured Material	
Viscosity [mPas] (Brookfield LVT, 25 °C, Sp. / rpm) part A <i>PE-Norm 001</i>	20,000 – 30,000
Density [g/cm³] <i>PE-Norm 004</i>	0.99
Flash point [°C] <i>PE-Norm 050</i>	> 80
Cured Material	
Hardness shore D <i>PE-Norm 006</i>	65 – 75
Temperature resistance [°C]	-40 – 120
Shrinkage [%] <i>PE-Norm 031</i>	< 8
Water absorption [%] <i>PE-Norm 016</i>	< 8
Glass transition temperature - DSC [°C] <i>PE-Norm 009</i>	86
Coefficient of thermal expansion [ppm/K] below Tg <i>PE-Norm 017</i>	69
Coefficient of thermal expansion [ppm/K] above Tg <i>PE-Norm 017</i>	362
Young's modulus – Tensile test [MPa] <i>PE-Norm 056</i>	667
Tensile strength [MPa] <i>PE-Norm 014</i>	20
Elongation at break [%] <i>PE-Norm 014</i>	10
Lap shear strength steel/steel [MPa]	21
Lap shear strength stainless steel/stainless steel [MPa]	20
Lap shear strength Al/Al [MPa]	16
Lap shear strength PC/PC [MPa]	2
Lap shear strength PA/PA [MPa]	6
Lap shear strength PVC/PVC [MPa]	3
Lap shear strength glass/glass [MPa]	*6

\*substrate failure

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### Transport/Storage/Shelf Life

Package type	Transport	Storage	Shelf life*
Syringe/Cartridge	At room temperature max. 25 °C	At room temperature max. 25 °C	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, mold release, or other contaminants in order to obtain an optimal and reproducible bond. For cleaning we recommend the cleaner IP® from Panacol, or a solution of Isopropyl Alcohol at 90% or higher concentration. Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pretreated in order to achieve sufficient adhesion.

#### Application

Our products are supplied ready to use. Depending on packaging they can be applied by hand directly from the container or by using compatible dispensing systems and automation.

Static mix tips provide the ability to efficiently mix the adhesive while dispensing. Many commercially available valve and controller options are available for two-part adhesives to ensure accurate and consistent adhesive dispensing. For assistance with dispensing and curing questions, please contact our Applications Engineering department. To obtain best results, the adhesive and substrates to be bonded may not be cold and should be allowed to warm to room temperature prior to processing.

#### Storage

Store uncured product in its original, closed container in a dry location. Any material removed from the original container must not be returned to the container as it could be contaminated. Panacol cannot assume responsibility for products that were improperly stored, contaminated, or repackaged into other containers.

#### Handling and Clean-up

For safe handling information, consult this product's Material Safety Data Sheet (MSDS) prior to use. Uncured material may be wiped away from surfaces with organic solvents. Do not use solvents to remove material from eyes or skin!

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### Disclaimer

The product is free of heavy metals, PFOS and Phthalates and is conform to the current EU-Directive RoHS.

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