

### 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
- ▶ 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          | 1 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 DATASHEET

## PENLOC® GTR-VT



### TECHNICAL DATA

|                                                                                         |                 |
|-----------------------------------------------------------------------------------------|-----------------|
| Resin                                                                                   | Methacrylate    |
| Appearance part A                                                                       | Yellowish       |
| Appearance part B                                                                       | Blue            |
| Appearance mix                                                                          | Green           |
| <b>Uncured Material</b>                                                                 |                 |
| Viscosity mix [mPas] (Brookfield LVT, 25 °C, Sp. / rpm)<br><i>Test instruction P001</i> | 20,000 – 30,000 |
| Density [g/cm³]<br><i>Test instruction P004</i>                                         | 0.99            |
| <b>Cured Material</b>                                                                   |                 |
| Hardness shore D<br><i>Test instruction P006</i>                                        | 65 – 75         |
| Typical operating temperature [°C]                                                      | -40 – 120       |
| Linear shrinkage [%]<br><i>Test instruction P031</i>                                    | <8              |
| Water absorption [wt%]<br><i>Test instruction P016</i>                                  | <8              |
| Glass transition temperature – DSC [°C]<br><i>Test instruction P009</i>                 | 86              |
| Coefficient of thermal expansion [ppm/K] below Tg<br><i>Test instruction P017</i>       | 69              |
| Coefficient of thermal expansion [ppm/K] above Tg<br><i>Test instruction P017</i>       | 362             |
| Young's modulus – Tensile test [MPa]<br><i>Test instruction P056</i>                    | 667             |
| Tensile strength [MPa]<br><i>Test instruction P014</i>                                  | 20              |
| Elongation at break [%]<br><i>Test instruction P014</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

### TRANSPORT/STORAGE/SHELF LIFE

| Package type      | Transport                         | Storage                           | Shelf life*                                  |
|-------------------|-----------------------------------|-----------------------------------|----------------------------------------------|
| Syringe/Cartridge | At room temperature<br>max. 25 °C | At room temperature<br>max. 25 °C | Delivery<br>min. 4.5 months<br>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 Hoenle, 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. Hoenle 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!

### DISCLAIMER

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

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

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