

# Technical Datasheet

## Vitralit<sup>®</sup> MASK 20101



### Product Description

Panacol Vitralit<sup>®</sup> adhesives are one-component, solvent-free radiation-curing adhesives. The advantages are very short curing times, good adhesion to a variety of substrates, and easy handling. Vitralit<sup>®</sup> products are used in electronics, medical applications, optics and for fixing parts in general.

Vitralit<sup>®</sup> MASK 20101 is a shear thinning, UV and visible light curable masking material that provides excellent surface protection during aggressive turbine component processes such as Air Plasma Spray coatings, acid stripping, and machining. As a special feature, Vitralit<sup>®</sup> MASK 20101 has a thermal initiator which allows subsequent curing in shadow areas. Vitralit<sup>®</sup> MASK 20101 is ideal for protecting nickel alloys and steel commonly used in the manufacture of hot engine components such as blades, vanes, rotors, transitions, etc. Vitralit<sup>®</sup> MASK 20101 provides fast curing properties and extremely good bonding during aggressive surface processes. Vitralit<sup>®</sup> MASK 20101 contains no nonreactive solvents and could be handled easily.

After processing, Vitralit<sup>®</sup> MASK 20101 is easily removed in a few minutes by incineration at temperatures above 600 °C. Product surfaces are free of any residue after mask removal. In many cases the incineration process can be combined with existing heat treating processes

### Curing Properties

UV-A	VIS	Thermal curing	Activator curing
✓	✓	✓	-

✓ suitable      - not suitable

The product cures within seconds with radiation in the UV-A - range (320 nm - 390 nm) and visible range (405 nm). For rapid and high quality crosslinking we recommend the UV devices manufactured by Dr. Hoenle AG, which complement our adhesive technology.

UV-curing (Hoenle Discharge lamp, 320-450nm)		
Intensity [mW/cm <sup>2</sup> ]	Layer thickness [mm]	Time [sec]
100	2	30

VIS-curing (Hoenle LED Spot 100, 405nm)		
Intensity [mW/cm <sup>2</sup> ]	Layer thickness [mm]	Time [sec]
100	0,5	10

Thermal curing	[min]
Time at 100°C	60
Time at 121°C	30
Time at 150°C	10

To obtain full cure at least one substrate must be transparent to the recommended wavelength. The curing speed will depend on the intensity of light, light source, the exposure time, and the light transmittance of the substrate. Increased mechanical properties are achieved after 12 hours.

### Technical Data

Resin acrylate  
Appearance translucent

#### Uncured material

Viscosity [mPas] (Kinexus Rheometer, 25°C, 10s <sup>-1</sup> ) <i>PE-Norm 064</i>	10 000 - 40 000
Viscosity [mPas] (Kinexus Rheometer, 25°C, 50s <sup>-1</sup> ) <i>PE-Norm 064</i>	2 000 - 10 000
Density [g/cm <sup>3</sup> ] <i>PE-Norm 004</i>	1,0
Flash point [°C] <i>PE-Norm 050</i>	>100
Refractive index [nD20] <i>PE-Norm 018</i>	1,4775

#### Cured material

Hardness shore D <i>PE-Norm 006</i>	60 - 90
Temperature resistance [°C]	-45 - 145
Shrinkage [%] <i>PE-Norm 031</i>	<3
Water absorption [mass %] <i>PE-Norm 016</i>	<4

Glass transition temperature DSC [°C] <i>PE-Norm 009</i>	47 - 56
Coefficient of thermal expansion [ppm/K] below Tg <i>PE-Norm 017</i>	7
Coefficient of thermal expansion [ppm/K] above Tg <i>PE-Norm 017</i>	261

Young's modulus E [MPa] <i>PE-Norm 056</i>	1 462
Tensile strength [MPa] <i>PE-Norm 014</i>	39
Elongation at break [%] <i>PE-Norm 014</i>	10

### 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.3 months max. 6 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 IP<sup>®</sup> Panacol. 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 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. When metering low viscosity materials from bottles the adhesive is transported by a diaphragm valve. If help is required, please contact our application engineering department.

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. Vitralit<sup>®</sup> adhesives cure slowly in daylight. Therefore, we recommend to expose the material to as little light as possible and the use of opaque hose lines and dispensing needles.

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.**

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