

Nano-Seal STR

Revised: 11.09.2017

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General description:

Nano-Seal STR is a low viscous two component impregnant. It is also used as a casting material. Nano-Seal STR penetrates into micropores by capillary forces. Contains no solvents.

Specific properties:

- Very good chemical resistance (due to the dense polymer network after curing).
- Very good thermal resistance.
- Very good corrosion resistance.
- Good leveling.
- Very good adhesion on a variety of materials.
- Almost no shrinkage upon curing.
- High strength.
- Thick layers possible.

Application areas:

Nano-Seal STR is used as sealer in Additive Manufacturing (FDM, SLS, SLM). In particular if chemical resistance is mandatory. It is also used for the filling of gaps and for mouldings.

Technical data at 20°C¹⁾:

Color:	Colorless to pale yellow, slightly opaque
Spec. weight:	1,1 g/cm ³
Shore-D:	> 80
Shrinkage:	< 0,2 %
Thermal resistance dry:	130°C
Thermal resistance wet:	80°C
Viscosity:	Brookfield: ca. 300 - 350 mPas at 25°C

Chemical Resistance (20°C)¹⁾:

Mineral oil	1	Ketones (generally)	2
Petrol	1	Acetone	2-3
Hydrochloric acid up to 10 %	1	Esters (generally)	1-2
Hydrochloric acid up to 20 %	1-2	Ethyl acetate	2
Sulphuric acid up to 10 %	1-2	Chlorinated hydrocarbons (gen.)	2-3
Caustic soda up to 30 %	1	Methylene chloride	3
Conc. Potassium hydroxyde	1	Toluene	1-2
Conc. Ammonium hydroxyde	1	Refrigerants	1-2
Acetic acid up to 5 %	2	Naphta	1
Salt water	1	Diesel	1

1: Fully resistant

3: Resistant when immediately wiped off

2: Short immersion possible

4: Not resistant

- 1) Please note: There is a decrease of the chemical resistance, hardness, strength and adhesion at elevated temperature.

Delivery form:

Slightly opaque pale yellow liquid
Quantities of a set with resin and hardener: 200 g, 1 L and 5 L

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Processing

- Remove all soiling (ideal is acetone). In particular oils and grease have to be removed thoroughly. Afterwards dry the surface.
- Roughen the surface up to about 100 µ. Sand blasting is ideal (when used as a coating and adhesion is crucial).
- Mix resin (component A) and hardener (component B) in the correct mixing ratio as indicated below. Make sure that all zones of the container are stirred.
- Pour repeatedly in another container in a thin stream thus removing entrapped air.
- Mix only quantities which can be processed within the pot life. Never mix more than 500 g as the material gets very hot upon curing!

Processing Modes:

Nano-Seal STR is applied by rolling, brushing and spraying.

Conditions for Processing:

Minimum temperature:	10°C
Max. humidity:	80 %
Temperature of the surface to be coated:	At least 3°C above dew point

Mixing Ratio (by weight):

Resin:	2,12		
Hardener:	1		
Typical quantities:	100 g	250 g	500 g
Resin:	67,9	169,9	340
Hardener:	32,1	80,1	160

Pot Life (20°C, 100 g):

Ca. 20 min.

Curing (thin layer) at 25°C:

Light mechanical load:	after 8 h
Full mechanical load:	after 24 h
Chemically fully resistant:	after 72 h (annealing at 90°C/2h increases the chemical resistance significantly)

Curing speed depends highly on the thickness of the layer. Thin layers (< 500 µ) cure much slower than thicker ones (a few mm).

Coverage:

Coverage of one sqm (thickness: 0,1 mm) requires 0,11 kg.

Additional Information:

Storage:	Below 35°C; close container thoroughly.
Shelf life:	The material can be stocked in originally closed containers for at least 12 month.

Safety:

Read material safety data sheet prior to use.
Nano-Seal STR gets very hot upon curing. Do not mix more than 500 g.

The technical data mentioned in this technical data sheet have to be regarded as rough guidelines. They have been obtained in our laboratory under optimal conditions. For the suitability of the product for specific applications we do not take the responsibility and we deny any liability. We recommend to do trials under conditions which reflect the individual practical application prior to the use of the material for the real application.