

General Description: Nano-Seal B1 is a putty grey 2-component composite material with mainly spherical ceramics. It is used for the protection against extreme wear.

Specific Properties:

- Very good abrasion resistance
- High contents of ceramics
- Firm bonding of the spheres to the polymer system
- Very good chemical resistance
- High thermal resistance

Fields of Application: Nano-Seal B1 is used for the coating of pumps, chutes, conveyors, screw conveyors, funnels. In each specific case we recommend trials under real conditions prior to the application; in particular if the parts to be coated are subject to thermal and mechanical load.

Technical Data (at 20°C)¹⁾:

Color:	White or Grey
Spec. weight:	2,6 g/cm ³
Shore-D:	85 - 90
Shrinkage:	< 0,2 %
Tensile strength:	35 N/mm
Compressive strength:	90 N/mm
Thermal resistance dry:	130°C
Thermal resistance wet:	70°C

1) At elevated temperature the hardness, adhesion and chemical resistance will decrease. The suitability has to be evaluated prior to use in each case under real conditions.

Chemical Resistance (at 20°C)¹⁾:

Mineral oil	1	Ketones (generally)	2-3
Petrol	1	Acetone	3
Hydrochloric acid up to 10 %	1-2	Esters (generally)	2
Hydrochloric acid up to 20 %	2	Ethyl acetate	2
Sulphuric acid up to 10 %	1-2	Chlorinated hydrocarbons (gen.)	2-3
Conc. Sulphuric acid	2-3 ²⁾	Ethanol	1-2
Nitric acid up to 10 %	2-3 ²⁾	Xylene	1-2
Caustic soda up to 30 %	1	Methylene chloride	3-4
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	2: Short immersion possible
3: Resistant when immediately wiped off	4: Not resistant

1) Please note: There is a decrease of the chemical resistance and hardness at elevated temperature!

2): In concentrated sulphuric acid and in nitric acid there is a colour change to reddish.

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.
- Mix resin (component A) and hardener (component B) in the correct mixing ratio as indicated below. Use an electric stirrer and make sure that all zones of the container are stirred.
A homogeneous colour indicates that the process can be finished.
- First apply a thin adhesion layer under pressure. Then add additional material up to the final thickness. The second layer should be applied onto the sticky first layer (at the latest after 5 h).
- In order to increase the wear resistance the last layer should be smoothed under moderate pressure after 2 to 3 h with a roller which has been wetted with a water/surfactant mixture. Please note, that coating of this surface is critical due to delamination. For a reliable adhesion on this layer it has to be cleaned with acetone and grinded.

Processing Modes:

B1 can only be puttied.

Conditions for Processing:

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

Mixing Ratio (by weight):

Resin (component A, putty, grey or white)			3
Hardener (component B, putty, grey or white)			1
Typical quantities:	100 g	250 g	500 g
Resin:	75	187,5	375
Hardener:	25	62,5	125

Pot Life (25°C, 100 g):

Ca. 30 min.

Curing at 25°C:

Light mechanical load: After 12 h
 Full mechanical load: After 48 h
 Full chemical resistance: After 72 h

Coverage:

Coverage of one sqm (thickness: 5 mm) requires 13 kg.

Additional Information:

Storage: Below 35°C; close container thoroughly.
 Shelf life: The material can be stocked in originally closed containers for at least 6 month.
 Safety: Read material safety data sheet prior to use.

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.