

## Product Description:

POLYSTONE MATROX has specifically been developed for the bulk material handling and mining industry to reduce typical flow problems of bulk solids in bins, hoppers, chutes, truck beds and other applications. However, every application makes its own special demands on the lining material.

## Applications:

- Bulk storage flow promotion
- Bulk storage wear liners
- Ship holds
- Hoppers
- Transfer chutes
- Rail dump hoppers
- Dump truck liners



## Technical Data

### General Properties

density	0.93 g/cm <sup>3</sup>	DIN EN ISO 1183-1
flammability	HB/HB 3 mm / 6 mm	UL 94
absorption of moisture	<0.01 %	DIN EN ISO 62

### Mechanical Properties

yield stress/ tensile strength	20 MPa	DIN EN ISO 527
tensile elongation	>200 %	DIN EN ISO 527
tensile modulus of elasticity	670 MPa	DIN EN ISO 527
shore hardness	63 Skala D	DIN EN ISO 868

### Thermal Properties

melting temperature	135 °C	ISO 11357-3
thermal conductivity	0.40 W / (m · K)	DIN 52612-1
specific thermal capacity	1.90 kJ / (kg · K)	DIN 52612
coefficient of linear thermal expansion	150 – 230 10 <sup>-6</sup> K <sup>-1</sup>	DIN 53752
service temperature, long term (min.)	-250 °C	Benchmark
service temperature, long term (max.)	80 °C	Benchmark
service temperature, short term	130 °C	Benchmark
heat deflection temperature	79 °C	DIN EN ISO 306 (Vicab B)

### Electrical Properties

dielectric constant	2.30	DIN IEC 60250
dielectric dissipation factor	1*10 <sup>-4</sup>	DIN IEC 60250
specific volume resistivity	>10 <sup>14</sup> Ω cm	DIN IEC 60093
surface resistivity	>10 <sup>14</sup> Ω	DIN VDE 0303-3
comparative tracking index (test solution A)	600	DIN EN 60112
dielectric strength	45 kV/mm	DIN EN 60243

## Benefits:

- Excellent Wear and Abrasion Resistance
- Very High Impact Strength
- Exceptionally Low Co-Efficient of Friction
- Good UV Stability
- High Operating Temperature
- Low Water Absorption
- Excellent Chemical Resistance



The following applies to Polyamides: Under the influence of moisture absorption, the mechanical properties change. The material becomes tougher and more resistant to impact, the modulus of elasticity declines. Depending on the environmental atmosphere, the temperature and the period of moisture absorption, only the surface layer is affected by alterations of property to a certain depth. On thick-walled parts, the centre area remains unaffected.

The short-term maximum application temperature only applies to very low mechanical stress for a few hours. The long-term maximum application temperature is based on the thermal ageing of plastics by oxidation, resulting in a decrease of the mechanical properties. This applies to an exposure to temperatures for at least 5.000 hours causing a 50% loss of the tensile strength from the original value (measured at room temperature). This value says nothing about the mechanical strength of the material at high application temperatures. In case of thick-walled parts, only the surface layer is affected by oxidation from high temperatures. With the addition of antioxidants, a better protection of the surface layer is achieved. In any case, the centre area of the material remains unaffected. The minimum application temperature is basically influenced by possible stress factors like impact and/or shock under application. The values stated refer to a minimum degree of impact stress.

The electrical properties as stated result from measurements on natural, dry material. With other colours (in particular black) or saturated material, there may be clear differences in the electrical properties.

The values indicated result from numerous individual measurements for an approximation of the values and are to our today's knowledge. They serve as information about our products and are presented as a guide to choose from our range of materials. This, however, does not include an assurance of specific properties or the suitability for particular application purposes that are legally binding. Since the properties also depend on the dimension of the semi-finished products and the degree of crystallisation (e.g. nucleating by pigments), the actual values of the properties of a particular product may differ from the indicated values.

The mechanical properties of fibre reinforced material were measured on injection moulded samples, parallel to fibre direction. Special construction details of further material specifications on request.