

STX 2000 PM

STX 2000 PM is an austenitic stainless steel alloy developed to give very high corrosion resistance in powder metallurgical components. It is compacted and sintered in a reducing atmosphere resulting in a complex component with a typical density of 6.5 g/cm³.

The components can subsequently be finished in different ways according to application needs. Calibration enables component tolerances as low as a few microns. Deburring reduces sharp edges and improve surface quality. Heat treatment gives the component higher strength. Impregnation of the components with a resin can close the porosities. Consult our experts for more information on finishing possibilities.

Chemical Specification

STX 2000 PM is based on the Cr-Mo-Ni alloy system. It is specifically developed to give a very high corrosion resistance but with a chemical composition that allows use in applications with maximum demands on Mo. This makes STX 2000 suitable for use in drinking water applications with high demands.

Mechanical Properties

	6.20 g/cm ³	6.40 g/cm ³	6.60 g/cm ³
Ro.2 yield strength [MPa]	143	161	180
UTS [MPa]	199	228	257
Elongation [%]	7	8	9
E-Modulus [GPa]	76	89	99
Vickers hardness HV/10	57	62	71

Figure 1: Typical mechanical properties at different densities.

Corrosion Properties

	24hrs	48ohrs	108ohrs	228ohrs	360ohrs
6.20 g/cm ³	Rio	Rio	Rio	Rio	Rio
6.40 g/cm ³	Rio	Rio	Rio	Rio	Rio
6.60 g/cm ³	Rio	Rio	Rio	Rio	Rio

Figure 3: Degradation after salt spray test performed on tensile test specimens (ISO 9227 and ISO 4628-3).

Definition of degradation Rio – Ri5:

- Rio – 0% rusted surface area
- Ri1 – 0.05% rusted surface area
- Ri2 – 0.5 % rusted surface area
- Ri3 – 1 % rusted surface area
- Ri4 – 8 % rusted surface area
- Ri5 – 40-50% rusted surface area

Porosity

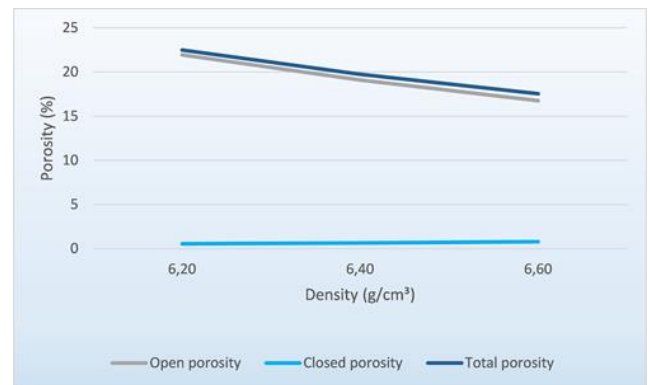


Figure 2: Open, closed and total porosity as a function of density.

Results

The data shown in this data sheet has been obtained by testing tensile test rods manufactured in accordance with the ISO 2740 standard.

The test specimens are manufactured on production equipment in order to reflect the processability of Sintex' equipment.

It is not possible to directly attribute all the results to specific components, as parameters such as powder flow, component size and geometry can have an effect on the properties of the individual components.

Please contact us for more information.

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