

STX 430L PM

STX 430L PM is a ferritic stainless steel alloy based on the AISI 430L standard. It is characterised by medium corrosion resistance, which makes it suitable for use in many bulk applications. STX 430L PM is compacted and sintered in a reducing atmosphere resulting in a complex component with a typical density of 6.7 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

C	Cr	Ni	Mo	Mn	Si
<0.03	17	-	-	< 0.2	0.9

Figure 1: Chemical specification for STX 430L PM - Standard designations AISI430L, W.nr. 1.4016.

Mechanical Properties

	6.50 g/cm ³	6.65 g/cm ³	6.80 g/cm ³
R o.2 yield strength [MPa]	186	207	212
UTS [MPa]	255	286	302
Elongation [%]	10	11	13
E-Modulus [GPa]	139	154	166
Vickers hardness HV/10	77	88	97

Figure 2: Typical mechanical properties at different densities.

Corrosion Properties

	24hrs	48hrs	168hrs
6.50 g/cm ³	Ri1	Ri2	Ri5
6.65 g/cm ³	Ri2	Ri3	Ri5
6.80 g/cm ³	Ri1	Ri2	Ri4

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

Definition of degradation Ri0 – Ri5 (Corrosion properties):

- Ri0 – 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

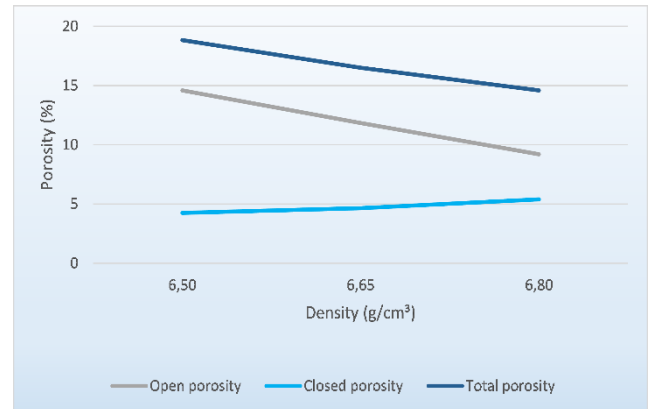


Figure 4: Open, closed and total porosity as a function of density.

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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