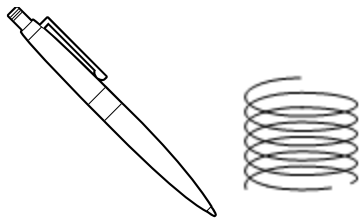


Zapp® 1.4105 IB Datasheet Ball Point Tips | Unleaded Special Alloy - Precision Wire

ZAPP

Zapp is certified to ISO 9001



Zapp® 1.4105 IB Description



Starting material wire spool

Zapp® 1.4105 IB – the Alloy for Ball Point Tips

The Zapp group has developed an alloy, especially for ball point pen refill tips. To the grade 1.4105IB the element lead is not alloyed to this steel. For this reason the lead value is clearly below the threshold value according to DIN EN 71-3.

Adriged Version of the DIN EN 71-3 – Threshold of the Migration of Certain Elements

Migrated element	Permissible value acc. to DIN EN 71-3 [ppm]	Permissible value acc. to ASTM F963-063 [ppm]	Measured value (-30 %) 1.4105 IB [ppm]
Lead	90	90	Below the detection limit
Chromium	60	60	20.51 – 22.33

Steel grade acc. to DIN EN 10088-3 Zapp® 1.4105IB

Chemical composition	Short symbol	Value [%]
Carbon	C	≤ 0.025
Silicon	Si	≤ 1
Manganese	Mn	≤ 1
Phosphorus	P	≤ 0.035
Sulfur	S	0.20 – 0.35
Chromium	Cr	16 – 18
Lead	Pb	-



Finished blanks

Machinability

By a systematic alloying addition, Zapp® 1.4105 IB shows a short chip breaking in machining. The machine stoppages are minimized and the tool life is increased.

Corrosion Resistance

Zapp® 1.4105 IB is one of the stainless steels, because of an increased Chromium and Molybdenum content and can therefore be used in more aggressive inks and gels. This quality is not resistant to the form of intergranular corrosion.

Dimensions

Ø 1,2 mm - Ø 4,5 mm
L 5 mm – 50 mm
(other dimensions on request)

Diameter Tolerances

According to DIN EN 10278 or appropriate to agreement. The whole tolerance can be laid in the plus and/ or minus range of tolerances, if requested.

Diameter: 0,02 mm

Length: 0,2 mm

Form of Delivery

Spools, top hat, coils, blanks
(other delivery forms upon request)

Mechanical Properties

	Short symbol	Test result at 20 °C	Unit
Tensile strength	Rm	680 - 940	MPa
Yield ratio	$R_{p0.2}$ Rm	≥ 90	%
Elongation	A	≤ 6	%

Physical Properties

	Short symbol	Test result at 20 °C	Unit
Density	ρ	7,7	$\frac{\text{kg}}{\text{dm}^3}$
Specific Heat	c	460	$\frac{\text{J}}{\text{kg} \cdot \text{K}}$
Heat conduction	λ	25	$\frac{\text{W}}{\text{K} \cdot \text{m}}$
Specific electrical resistance	ρ	0,7	$\frac{\Omega \cdot \text{mm}^2}{\text{m}}$
Young´s modulus	E	220	kN/mm ²

PRECISION WIRE

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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

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