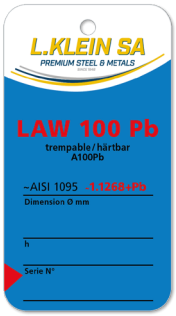
L.KLEIN SA
PREMIUM STEEL & METALS
SINCE 1946



LAW 100 PB

Free cutting high carbon steel

Distinctive feature and main attributes

A hardenable, unalloyed free cutting steel, offering maximum surface hardness with high strength and wear resistance.

Use and application range

This material is specially designed for small high precision parts in the watch industry due to its microstructure but also for other applications. Good for polishing.

Norms

Material No.	~ 1.1268+Pb
DIN Abbreviation	Mh 97
AISI / SAE / ASTM	AISI ~ 1095
Euro Standard EN	Mh97
IMDS	4472299

Chemical composition (% wt)

C	Si	Mn	P	S	Pb	Fe
0.90 – 1.05	0.15 – 0.25	0.60 – 0.80	max. 0.04	0.05 – 0.07	0.15 – 0.25	balance

Execution, delivery form, standard sizes and availability

- Execution in 3 m (2 m) round bars as well as coils
- ROHS compliant
- **Standard size in stock:** see product range

Other sizes on request

Tolerances

- Ø < 2.00 mm, cold drawn, polished; ISO h7
- Ø ≥ 2.00 mm, cold drawn, ground, polished; ISO h7 (h6)
- Coil, cold drawn; ISO fg7

Tighter tolerances (up to +/- 0.001 mm) on request

- **Surface finish for bars:** ≤ 0.4 (N5)
- **Bar straightness:** max. 0.4 mm / m

Mechanical properties

At delivery status:

- **Tensile strength (Rm):** 700 – 925 MPa, depending on size
- **Hardness after tempering:** 64 / 66 HRC

Crack detection bars

Eddy-current crack tested DIN / EN 10277-1 detected depth error < 0.1 mm; Class 4

- Ø ≥ 2.00 mm

Heat treatment

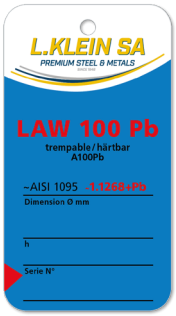
- **Tempering oil Ø < 5.00 mm:** 800 – 820°C
- **Tempering water Ø > 5.00 mm:** 780 – 800°C
- Annealing as required see charts

Cutting rates

V_c ~ 50 – 70 m / min, value depending on the lubrication oil, cutting tools and shape of parts.

Modifications will not be adjusted automatically. Last update 05/2024

L. Klein SA • Chemin du Long-Champ 110 • CH-2504 Biel/Bienne • Tél. +41 (0)32 341 73 73 • Fax +41 (0)32 341 97 20
info@kleinmetals.ch • www.kleinmetals.ch



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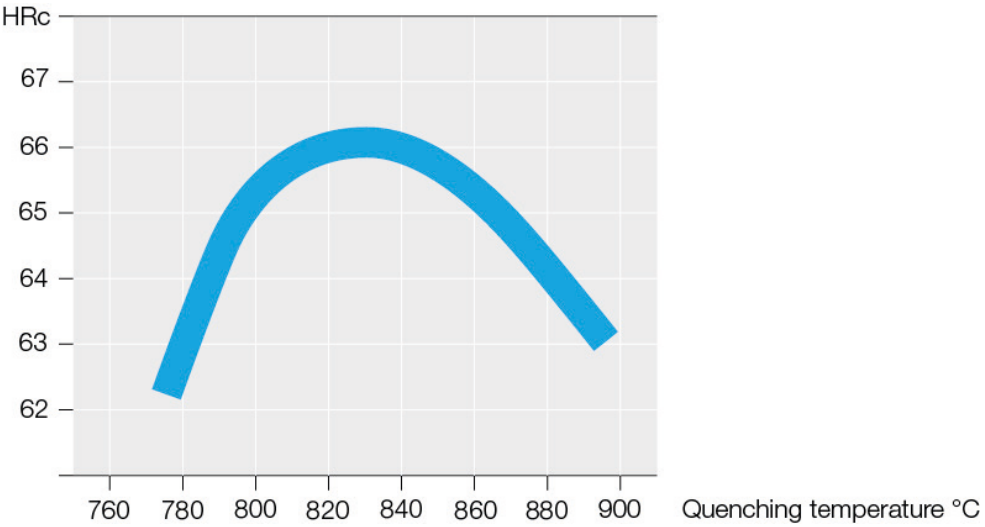
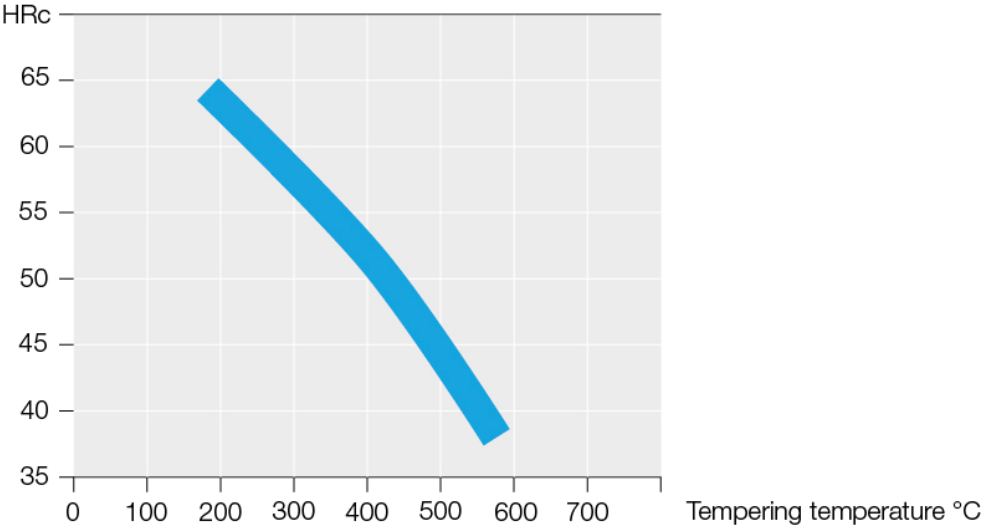
Hardening curve



Annealing curve 30 min



When hardening in oil, we recommend not passing over the annealing temperature of 820°C in order to avoid cracks. The water should be pre-heated to about 50°C. The above curves are limited to sizes of approximately 5 mm. The result after heat treatment can be slightly different than shown on this curves, depending on the shape and size of the part.