



Steel

APZ10

X120CrMoVN19-2

SPECIFICATIONS

Specific grade obtained by powder metallurgy.

AFNOR: X120CrMoVN19-2*

*Symbolic designation

COMPOSITION

Carbon.....	1.15
Chromium.....	19.00
Molybdenum.....	2.10
Vanadium.....	0.60
+ addition of nitrogen	

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: gradual heating to 830°C holding time at temperature followed by slow cooling.
Take normal precautions to avoid decarburization
- Brinell hardness approximately 280 HB in the softened condition

APPLICATIONS

- Moulds for manufacturing abrasive and corrosive plastic materials.
- Cutting tools
- Food-related applications
- Injection parts

Grade	Typical HRC application hardness	Machinability	Wear Resistance	Spalling Resistance	Sinking Resistance	Toughness
D2 standard	56/61					
M2 standard	61/63					
SRV4	61/63					
APZ10	60/62					

CHARACTERISTICS

- Very good wear resistance
- Very good corrosion resistance
- Good balance between hardness and toughness
- Suitable for polishing
- Easy to machine in the annealed condition

HEAT TREATMENT

- For applications requiring maximum corrosion resistance and where the temperature does not exceed 150°C, the following treatment is recommended:

- Austenitisation: 1075°C.
- Cooling: Oil or gas pressure depending on the section and shape of the parts.
- Cryogenic treatment: 2 hours at -80°C.
- Tempering: 2 hours at 180 / 210°C.

Typical hardness after treatment: 60 HRC

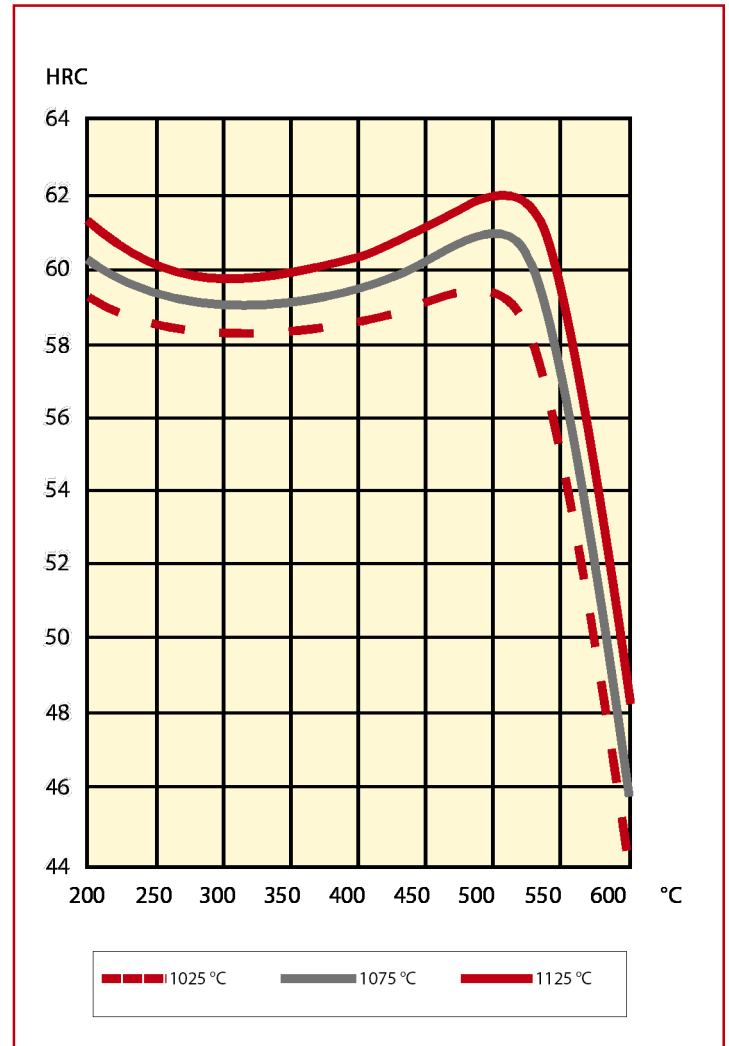
- For applications in which the temperature is likely to exceed 150°C in service or during surface coating operations, the following treatment is recommended:

- Austenitisation: 1125°C.
- Cooling: Oil or gas pressure depending on the section and shape of the parts.
- Cryogenic treatment: 2 hours at -80°C.
- 2 tempers of 2 hours at 500-525°C.

Typical hardness after treatment : 62 HRC

This treatment provides a lower level of corrosion resistance than the first treatment.

TEMPERING CURVE



Contact:

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The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.