

SICAK İŞ TAKIM ÇELİKLERİ

Mevcut Ürün Şekilleri

Uzun Ürünler*

Açık Kalıpta Dövme

*) Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Ürün Tanımı

BÖHLER W720 VMR is not a classic hot work tool steel, but an ultra-high strength maraging steel. Compared to quenched and tempered steels, the material generates its high strength not through a hardened and tempered martensitic structure with a high carbon content and secondary hardening carbides, but through the precipitation of intermetallic phases from a tough nickel martensitic matrix. BÖHLER W720 VMR corresponds to material number 1.6358 (X2NiCoMoTi18-9-5) and has proven to be ideally suited for many tool steel applications in cold and hot work (e.g., for extrusion stems) up to 450 °C.

Erime rotası

VIM + VAR

Uygulamalar

- > Ekstrüzyon
- > Enjeksiyon kalıplama
- > Tespit Elemanları, Cıvatalar ve Somunlar
- > Makine Mühendisliği için Genel Parçalar
- > Yüksek Basıncılı Döküm

Teknik veriler

Malzeme Tanımı	
1.6358	SEL
K93120	UNS

Kimyasal Bileşim

C	Si	Mn	Mo	Ni	Co	Ti	Al
≤ 0,030	≤ 0,10	≤ 0,10	5,00	18,50	9,00	0,70	0,10

Teslimat durumu

Solution annealed

Sertlik (HB) maks. 353

Solution annealed + precipitation hardened

Çekme dayanımı (UTS) (MPa) min. 1900

Isıl işlem

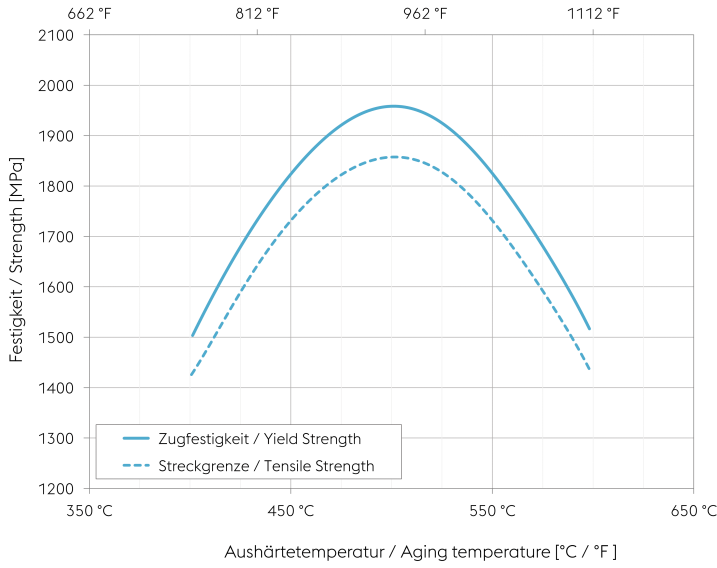
Solution annealing

Sıcaklık	820 °C	1 hour air, gas
----------	--------	-----------------

Precipitation hardening

Sıcaklık	430 °C	3 hours / air 1720 to 1870 N/mm ²
Sıcaklık	480 °C	3 hours / air 1860 to 2260 N/mm ²

Ageing chart



Aging:

Solution annealed 820°C (1508°F) / 1 hour / air
Aging time: 3 hours

Fiziksel özellikler

Sıcaklık (°C)	20
Yoğunluk (kg/dm ³)	8,2
Termal iletkenlik (W/(m.K))	14
Özgül ısı kapasitesi (kJ/kg K)	0,46
Spes. elektrik direnci (Ohm.mm ² /m)	0,4
Elastikiyet modülü (10 ³ N/mm ²)	193

Termal genleşmeler

Sıcaklık (°C)	100	200	300	400	500	600
Termal genleşme (10 ⁻⁶ m/(m.K))	10,2	10,8	11	11,4	11,8	11,8

Long Products: For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

Open Die Forgings: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Open Die Forgings of voestalpine BÖHLER Edelstahl GmbH & Co KG.

The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.