

## CHEMICAL COMPOSITION

C	Cr	Mo	W	Co	V
0.93	4.2	5.0	6.4	4.8	1.8

SAFETY DATA SHEET SDS: B

## STANDARDS

- USA: AISI M35
- Europe: HS 6-5-2-5
- Germany: 1.3243

## DELIVERY HARDNESS

- Typical soft annealed hardness is 255 HB
- Cold drawn and cold rolled material is typically 10-40 HB harder

## DESCRIPTION

BlueTap®Co is specifically designed to address the needs of tap manufacturers. Thanks to its fine and homogeneous microstructure, it offers an excellent grindability, and a superior combination of hardness and toughness.

## APPLICATIONS

- Taps

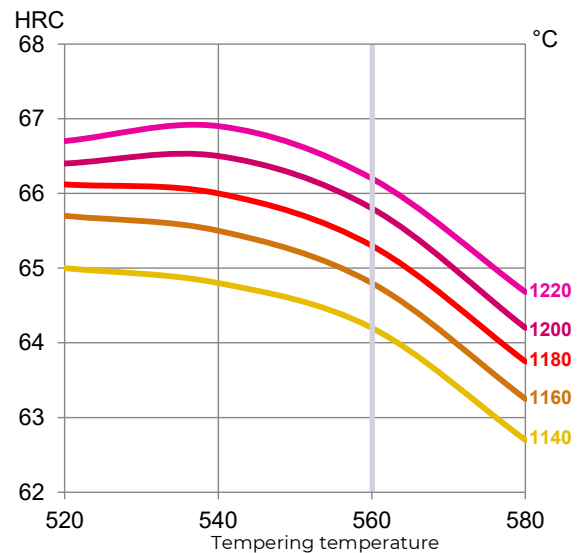
## FORM SUPPLIED

- Drawn bars
- Peeled bars up to  $\varnothing$  40 mm

## HEAT TREATMENT

- Soft annealing in a protective atmosphere at 850-900°C for 3 hours, followed by slow cooling 10°C per hour down to 700°C, then air cooling.
- Stress-relieving at 600°C to 700°C for approximately 2 hours, slow cooling down to 500°C.
- Hardening in a protective atmosphere with preheating in 2 steps at 450-500°C and 850-900°C and austenitizing at a temperature suitable for chosen working hardness.
- 3 tempers at 560°C are recommended with at least 1 hour holding time each time, and cooling down to 25°C between each.

## GUIDELINES FOR



Hardness after hardening, quenching and tempering 3x1 hour

Tool	Hardening	Tempering
Multi-edge cutting tools	1180-1220°C	560°C

## PROCESSING

BlueTap®Co can be worked as follows:

- machining (grinding, turning, milling)
- polishing
- hot forming
- electrical discharge machining
- welding (special procedure including preheating and filler materials of base material composition).

## GRINDING

During grinding, local heating of the surface, which can alter the temper, must be avoided. In general, grinding must be carried out more aggressively than with traditional tap materials such as E M35, in order to avoid blunting of the wheel. Erasteel's technical support team can provide specific recommendations, and grinding wheel manufacturers can help choosing the most appropriate grinding wheels.

## SURFACE TREATMENT

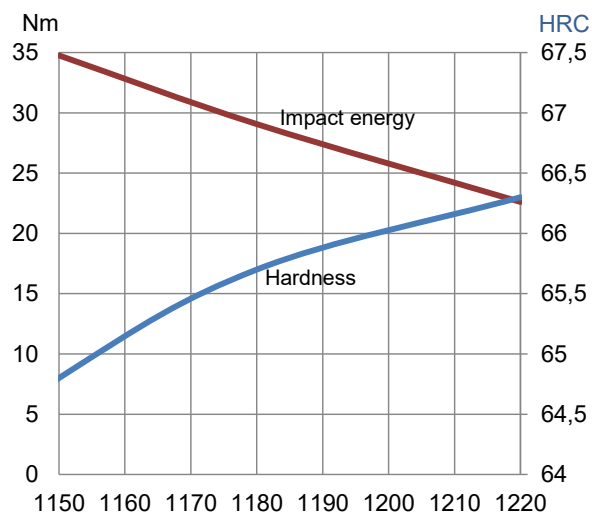
The steel grade is a perfect substrate material for PVD coating. If nitriding is requested, a small diffusion zone is recommended but avoid compound and oxidized layers.

## PROPERTIES

### PHYSICAL PROPERTIES

Temperature	20°C
Density g /cm <sup>3</sup>	8.0

### IMPACT TOUGHNESS



Hardening temperature in °C  
 Original dimensions Ø 16 mm  
 Tempering 3 x 1 hour at 560° C  
 Unnotched test piece 7 x 10 x 55 mm

### COMPARATIVE PROPERTIES

