

### 1. Standards

AISI 4140  
DIN 1.7225  
AFNOR 42 Cr Mo 4

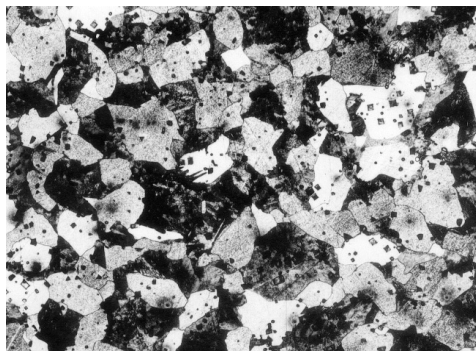
### 3. Composition

<sup>(1)</sup> Analysis obtained by spark emission spectrometry

<sup>(2)</sup> Combustion analysis

%	C <sup>(2)</sup>	0,32-0,42
%	Cr <sup>(1)</sup>	0,9-1,20
%	Mo <sup>(1)</sup>	0,15-0,30
%	Ni <sup>(1)</sup>	< 0,01
%	Cu <sup>(1)</sup>	< 0,01
%	Si <sup>(1)</sup>	< 0,1
%	S <sup>(1)</sup>	< 0,005
%	P <sup>(1)</sup>	< 0,01
%	V <sup>(1)</sup>	< 0,01
%	Fe	Compl.

### 4. Characteristics as sintered



Optical micrograph with etching

#### Microstructure

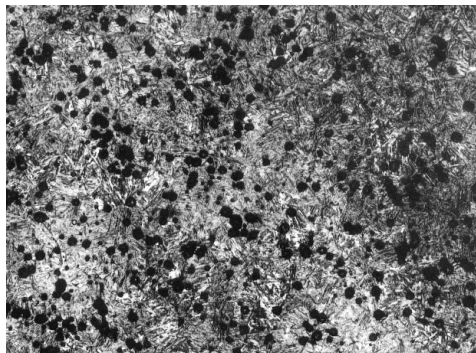
Homogeneous ferrite + perlite structure  
Grain size G=6 (~ 78 μm)

#### Mechanical Properties

Traction:  $R_m > 500$  MPa  
 $R_{p0,2} > 250$  MPa  
 $A\% > 20$  %

Hardness: 140 Hv<sub>10</sub>  
Roughness: Ra < 1 μm

### 5. Mechanical properties with quench and tempering



Optical micrograph with etching

#### Microstructure

Homogeneous ferrite + perlite structure

#### Mechanical Properties

Traction:  $R_m > 1650$  MPa  
 $R_{p0,2} > 1150$  MPa  
 $A\% > 5$  %

Hardness: 490 Hv<sub>10</sub> / 45 HRC  
Roughness: Ra < 1 μm  
Minimum density : 7,4  
Non-resistant to corrosion