Alleima® 10C16Mo3V1
Strip steel
Datasheet

Alleima® 10C16Mo3V1 is an 8% chromium steel known for its good wear resistance properties and toughness. The grade is suitable for tools and knives in challenging applications, such as garden tools and harvest knives.

Chemical composition (nominal)

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C	Si	Mn	P	S	Cr	Mo	V
0.5	0.9	0.4	≤0.03	≤0.01	8.0	1.4	0.3

Forms of supply

Strip can be supplied either in coils or as straightened lengths of 0.5 - 4.0 m (1.6 - 13.1 feet). Coil weight is max 5 kg/mm (280 lbs/in.) of the strip width.

Hardening and tempering of strip steel is needed to achieve the correct finish and to meet the properties required by the end user.

Dimensions

Thickness, mm (in.)		Width, mm (in.)	
≥ 1.0 (0.039)	≤ 4.5 (0.177)	≥ 10 (0.394)	≤ 380 (14.96)

Other sizes can be supplied to meet specific requirements.

Tolerances

The thickness and width tolerances are +/- tolerances to the nominal size. The normal tolerance classes for most of our strip products are T1 and B1. Tighter tolerances as well as other tolerance limits can be offered upon request.

Heat treatment

The exact hardening parameters need to be adjusted in every individual furnace. A general recommendation is given below:

Austenitizing

Piece hardening:
Recommended temperature: 1035°C (1895°F)

The soaking time depends on the material thickness.

Batch hardening:
Recommended temperature: 1030°C (1885°F)
Soaking time 30 minutes in furnace.
The temperature should first be equalized at 850°C (1560°F) for 30 minutes to avoid necessary temperature variations.

Quenching:
Quench to room temperature as rapid as possible. For optimum results 600°C (1110°F) should be reach within 2 minutes or less.

Tempering:
It is recommended that tempering is performed between 175-350°C (345-660°F) for 2 hours. Below an estimation of the hardness level after different tempering that can be expected.

Hardness	Temperature
58,5 HRC	175°C (345°F)
57,5 HRC	225°C (435°F)
56 HRC	350°C (660°F)

Mechanical properties

Condition	Tensile strength, MPa (ksi)	Hardness, HV[1)]	Hardness, HRB[2)]
Annealed	700 ± 100 (102 ± 14)	215 ± 35	94.3 ± 6
Cold-rolled	700 – 1000 (102 - 145)	215 - 315	94.3 – 106.6

[1)] Hardness data is for guidance only.

[2)] Values above 100 are outside HRB and are provided as indication only.

Physical properties

The physical properties of a steel are related to a number of factors, including alloying elements, heat treatment and manufacturing route, but the data presented below can generally be used for rough calculations.

Density: 7.7 g/cm3 (0.28 lb/in3)

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