SIDEX
solutions provider for the steel industry

Dasa-Rägister
UNI EN ISO 9001:2015
IQ-0120-01

# **45NiCrMoV16** – W 1.2746

*Chemical Composition : %*

| C | Si | Mn | P | S | Cr | Mo | Ni | V |
|---|---|---|---|---|---|---|---|---|
| 0,41÷0,49 | 0,15÷0,35 | 0,60÷0,80 | ≤ 0,025 | ≤ 0,020 | 1,40÷1,60 | 0,73÷0,85 | 3,80÷4,20 | 0,45÷0,55 |

*Description*: special cold work tool steel, air or oil hardenable with highest toughness.

*Applications*: forging tools, dies of all sorts, shapes and sizes, hot forging and pressing tools for steel and metal. Moulds, bushings, piercers, ecc.

*Phisical properties (avarages values ) at ambient temperature:*
Modulos of elasticity [$10^3$x N/mm$^2$].: 210
Density [g/cm$^3$]: 7,86

*Soft annealing:* Heat to 610-850°C, cool slowly in furnace. This will produce a maximum Brinell hardness of 295.

*Stress Relieving:* Stress relieving to remove machining stresses should be carried out by heating to approx. 650°C, holding for 1-2 hours at heat, followed by air cooling.
This operation is performed to reduce distortion during heat treatment.

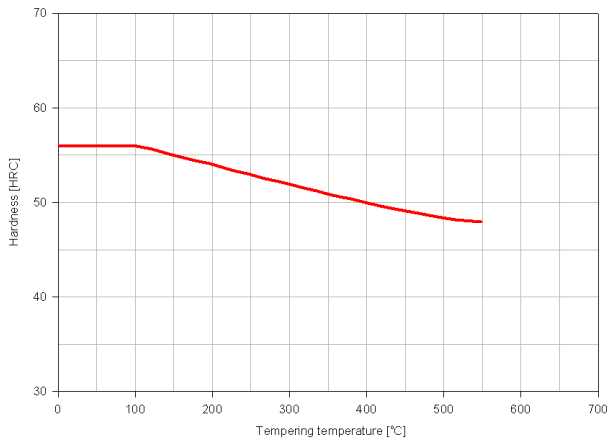
*Hardening:* Harden from a temperature of 880-910°C followed by air or oil quenching or warm bath quenching 180-220°C. Hardness after quenching is 56 HRC.

*Tempering:* Tempering temperature: See the data below:

*Tempering temperature (°C) vs. Hardness (HRC)*

| 100°C | 200°C | 300°C | 400°C | 500°C | 550°C |
|---|---|---|---|---|---|
| 56 | 54 | 52 | 50 | 49 | 48 |

*Tempering Diagram:*




*Forging:* Hot forming temperature 1100-900°C.

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