

DIN - Material - No. 1.3344
Code S 6-5-3
Comparable standards AISI: M3, EU: HS6-5-3

| Chemical composition (Typical analysis %) | C | Cr | Mo | V | W |
|---|------|-----|-----|-----|-----|
| | 1.20 | 4.1 | 5.0 | 2.9 | 6.4 |

Steel properties Molybdenum high - speed tool steel. Basic chemical composition as M2, with higher V- and C- content. Very high resistance to wear and to softening. High resistance of blade and good toughness. Deep hardening response.

| Physical properties | Density g/cm ³ | 20°C | | | | | | |
|----------------------------|---|--------|--------|--------|--------|--------|--------|----------|
| | | 8.07 | | | | | | |
| | Coefficient of linear thermal expansion | | | | | | | |
| | 10 ⁻⁶ °C ⁻¹ | 20-100 | 20-200 | 20-300 | 20-400 | 20-500 | 20-600 | 20-700°C |
| | | 11.7 | 11.9 | 12.3 | 12.8 | 13.0 | 13.0 | 13.0 |

Applications Tap drills, reamers, heavy duty milling cutters, dies, broach needles hexagon socket punches, piercing dies for nut production

Stress Relieving Holding at approx 650°C for one hour.

| Heat treatment | | Soft annealing°C | Cooling | Hardness HB | | | | | | | | |
|-----------------------|--------------------|--------------------|----------------|-------------|------|------------------------------|--------------------------|---------|-----|------|-----|-----|
| | | 820 - 880 | furnace | 240 - 280 | | | | | | | | |
| Heat up 1. step | Preheating 2. step | Preheating 3. step | Hardening from | | | Tempering | As tempered hardness HRC | | | | | |
| °C | °C | °C | °C | | | in | °C | | | | | |
| 400 approx | 850 | 850 & 1050 | 1190 - 1230 | | | oil, air, thermal bath 550°C | 3 x 1h 550 - 570 | 64 - 66 | | | | |
| Tempering | | °C | 200 | 300 | 400 | 500 | 525 | 550 | 575 | 600 | 650 | 700 |
| | | HRC | 63 | 61 | 61.5 | 63 | 65 | 65.5 | 63 | 62.5 | 58 | 47 |

Transformation Temperatures
Ac₁ = 755 C, Ac₃ = 815 C

