

Material type

**Metal**

Material name

**Tool steel H13 | 1.2344 | X40CrMoV5-1 - Annealed state**

Alternative names

**1.2344, X40CrMoV5-1**

Process compatibility

**CNC machining****Mechanical properties**

Ultimate tensile strength	690 MPa
Yield strength	330 MPa
Young's modulus (modulus of elasticity)	190 GPa
Elongation at break	21 %

**Thermal properties**

Thermal expansion coefficient	10.4 - 12.4 $10^{-6}/^{\circ}\text{C}$
Thermal conductivity	22 - 29 W/(m $\cdot^{\circ}\text{C}$ )

**Post treatments**

Post-Processing	Cold & hot working, annealing and hardening
Anodizing compatibility	Not suitable

**Physical properties**

Magnetism	Magnetic
Weldability	Poor

**Electrical properties**

Electrical resistivity	52 - 86 $\mu\Omega\cdot\text{cm}$
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**Common applications**

Extrusion & pressure dies
Forging & stamping dies
Hot shear blades

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