

**1.2344 / H13 Hot Work Tool Steel**

Standards	DIN	AISI	JIS	ГОСТ
X40CrMoV51	1.2344	H13	SKD61	4X5MΦ1C

**Chemical composition** (typical analysis in %)

C	Si	Mn	P	S	Cr	Mo	V
0.37-0.42	0.90-1.20	0.30-0.50	≤0.030	≤0.030	4.80-5.50	1.20-1.50	0.80-1.15

**Steel properties :**

Chrome - molybdenum - vanadium-silicon steel for hardening in oil and in air with very good hardenability (the steel is hardened in the whole cross-section up to the diameter of about 150 mm), high firmness during the heat and resistance to the tempering and the wear (higher than by the steel 1.2343), very good toughness and plastic properties during normal and also higher temperatures. Further the steel has a very good resistance to tearing of thermal fatigue (lower than by the steel 1.2343) and higher sensitivity to quick changes of temperature than by the steel 1.2343. The steel is suitable for the heat treatment also for firmness over 1765 N/mm<sup>2</sup> and for tools cooled by water. It is well-workable during the heat and well-workable in the soft-annealed state.

**Applications :**

Casting dies for aluminum, magnesium and zinc, extrusion dies and adaptor ring, hot stamping and press forge dies, Shear blades for hot work and hot swaging dies. Firm and movable parts meeting the liquid metal, inserts of functional parts of core molds, inlet cases, slide-valves, dividers etc. The steel can also be used for tools for hot cutting, small and middle-sized shear blades, trimming dies and cutting thorns.

**Size range :**

Diameter (mm)	Thickness (mm)	Width (mm)
6 - 500	6 - 400	Max 810

**Delivery condition :** Soft annealed to max. 229 HB

## Heat Treatment:

Soft annealing

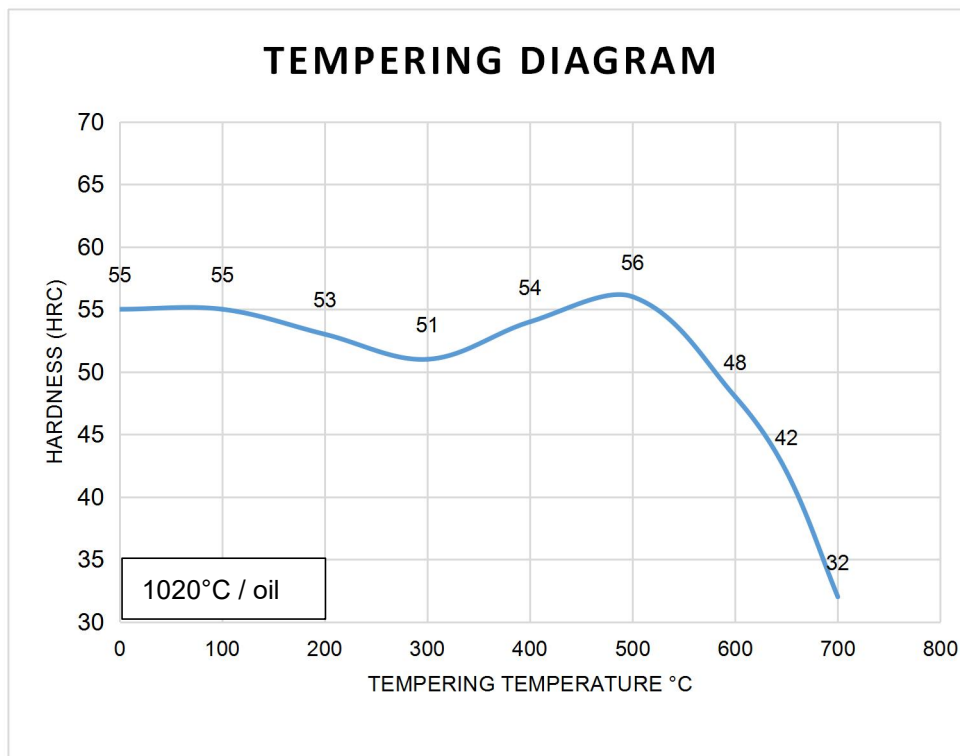
Temperature(°C)	Cooling	Hardness
750 - 780	furnace	max. 229 HB

Forging

Temperature(°C)	Cooling	
900 - 1100	furnace	

Hardening

Temperature(°C)	Cooling	Tempering
1010 - 1030	oil or air	see tempering diagram



Remarks: All technical information is for reference only.

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## ALTA SPECIAL STEEL

No.86 road, huangshi, China · [www.altaspecialsteel.com](http://www.altaspecialsteel.com)

Tel : 86 714 3064045 · Fax : 86 714 3046045