

## Hot Work Tool Steel — AISI H13

AISI H13 Hot Work Tool Steel has air hardening with good toughness, resistance to abrasion and high red hardness. It resists softening to 550°C and has good resistance to heat checking. Will Nitride with a case hardness over 1000 V.P.N. Generally supplied annealed to HB 230 max.

### HEAT TREATMENT

Forge: at 900°C – 1100°C, Cool slowly and anneal immediately

Anneal: at 850°C – 870°C , Cool slowly in furnace

Stress Relieve: at to 600°C – 650°C , Cool in still air

### Typical Chemical Analysis

C	Si	Mn	Cr	Mo	V	P	S
0.32-0.45	0.80-1.20	0.20-0.50	4.75-5.50	1.10-1.75	0.80-1.20	0.030MAX	0.030MAX

### Related specifications:

AS 1239	H13A
ASTM A 681	H13 UNS T20813
BS 4659	BH13
BS EN ISO 4957	X40CrMoV 5-1
JIS G 4404	SKD 61
Werkstoff	1.2344 X40CrMoV5-1

**Harden:** Preheat at 650°C – 850°C

Raise to 1020°C-1050°C , Cool in air, oil or into salt bath held at 500°C-550°C and then air cool.

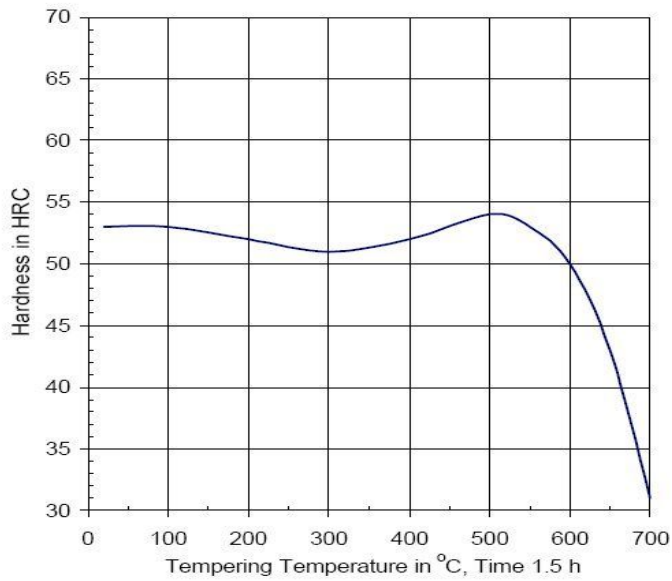
**Temper:** at 500°C – 650°C , Cool in still air . Double tempering recommended

### Typical Hardness / Applications – Air cooled at 1020°C–1050°C & tempered

Temper	HRC	Typical Applications
500°C	53 – 55	Swaging dies
550°C	52 - 54	Ejector pins & nozzles for tin, lead or zinc die casting
575°C	50 – 52	Blanking & bending dies. Aluminium die casting dies
600°C	47 – 50	Gripper and header dies.
610°C	46 – 49	Forging dies and inserts, extrusion dies, mandrels etc.
620°C	44 – 48	Hot shears, forming dies and punches.

Heat treatment and typical hardness for guidance only

## TYPICAL TEMPERING CURVE – AISI H13



Section: 30mm – Air cooled at 1020 – 1050°C

Double tempering recommended

### Typical Applications:

Hot punches and dies for blanking, bending, swaging and forging, hot extrusion dies for aluminium, cores, ejector pins, inserts and nozzles for aluminium, tin and lead die casting.

**DAYE JINGCHENG MOULD CO., LTD**