

HOT WORK TOOL STEEL

Wr.Nr.	PN	EN	GOST	AISI
1.2344	WCLV	X40CrMoV5-1	4X5MΦ1C	H13

## CHEMICAL COMPOSITION

Chemical composition (in weight %)

Element	C	Si	Mn	P	S	Cr	Mo	V
min	0.35	0.80	0.25	max.	max.	4.80	1.20	0.85
max	0.42	1.20	0.50	0.03	0.02	5.50	1.50	1.15

## APPLICATION

Heavy duty hot work tools and dies, mainly for light alloy processing: mandrels, dies, and containers for metal tube and rod extrusion; hot extrusion equipment; tools and dies for the manufacture of hollow bodies, screws, rivets, nuts and bolts. Die casting equipment, forming dies, die inserts, hot shear blades, and plastic moulding dies.

## TREATMENT

Hardening	1020°C ± 10°C / Oil
Tempering	550°C ± 10°C (see tempering diagram)
Hardness [HRC]	min. 50

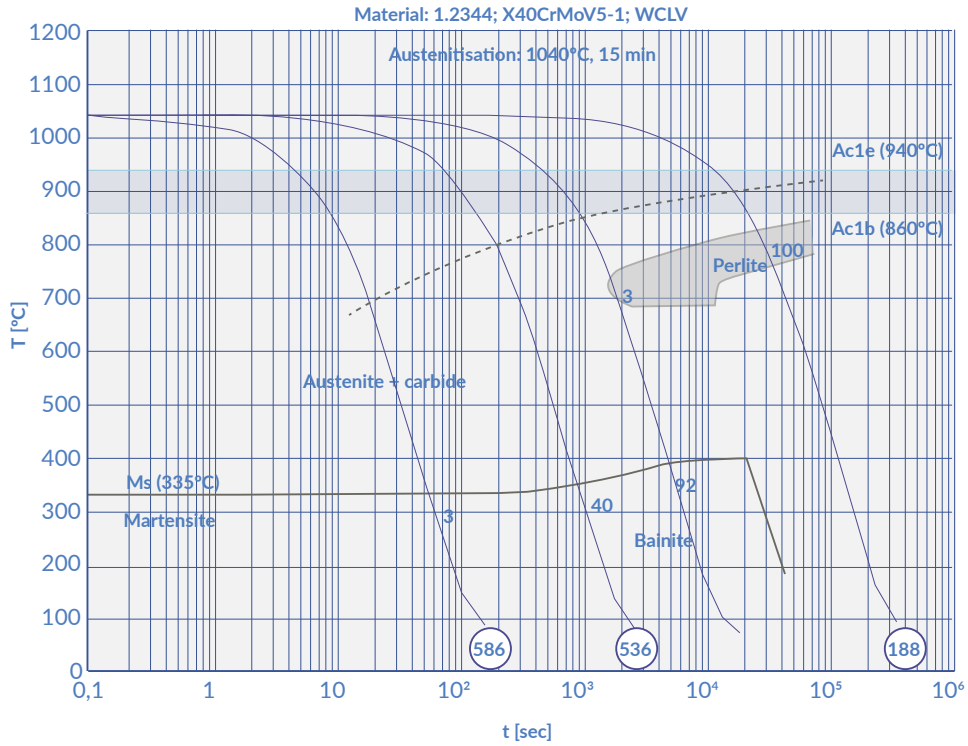
## ADDITIONAL HEAT TREATMENT

Soft annealing	750 - 800°C
Stress relieving	650 - 680°C (only for soft delivery conditions)
Hardening	1020 - 1080°C / Air, oil, hot bath 500°C, fluidised bed, gas overpressure
Tempering	550°C ± 10°C, min. 2x
Hardness [HRC]	52 - 56 in oil or salt bath; 50 - 54 in air

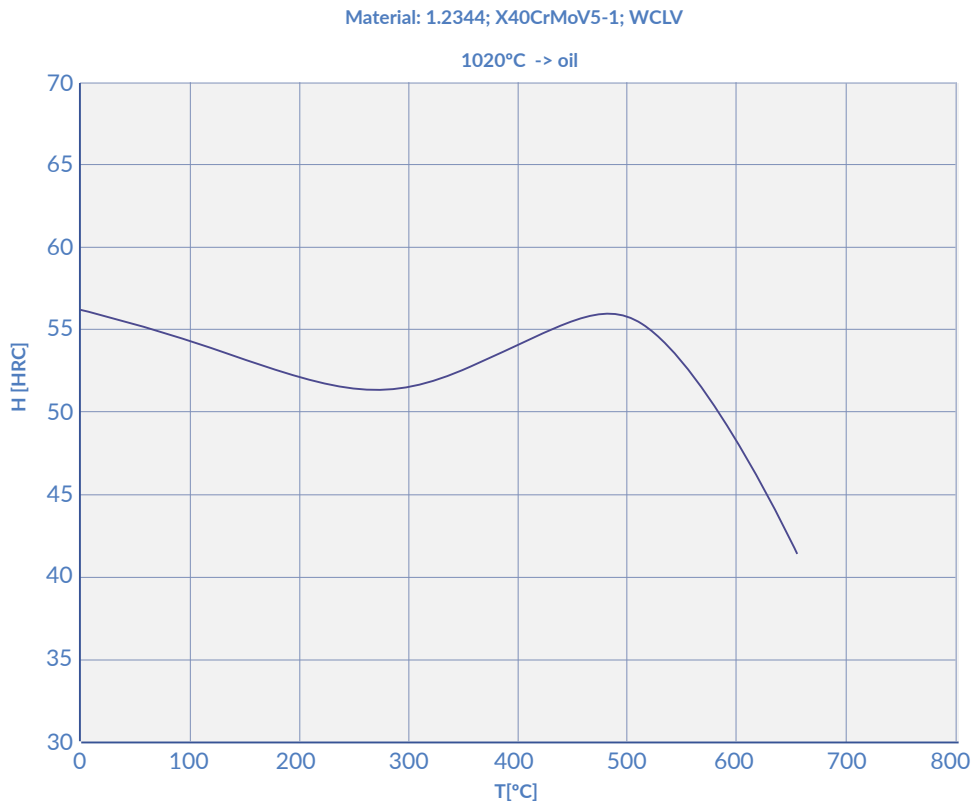
## MECHANICAL PROPERTIES

Condition	Soft annealed (+A)	Annealed and cold drawn (+A+C)
Hardness [HB]	max. 229	max. 249

## CONTINUOUS COOLING TRANSFORMATION (CCT) DIAGRAM



## TEMPERING DIAGRAM



**NOTE:** All technical information is for reference only.