

1.2344

X40CrMoV5-1 / WCLV

HOT WORK TOOL STEEL

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.

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

TREATMENT

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

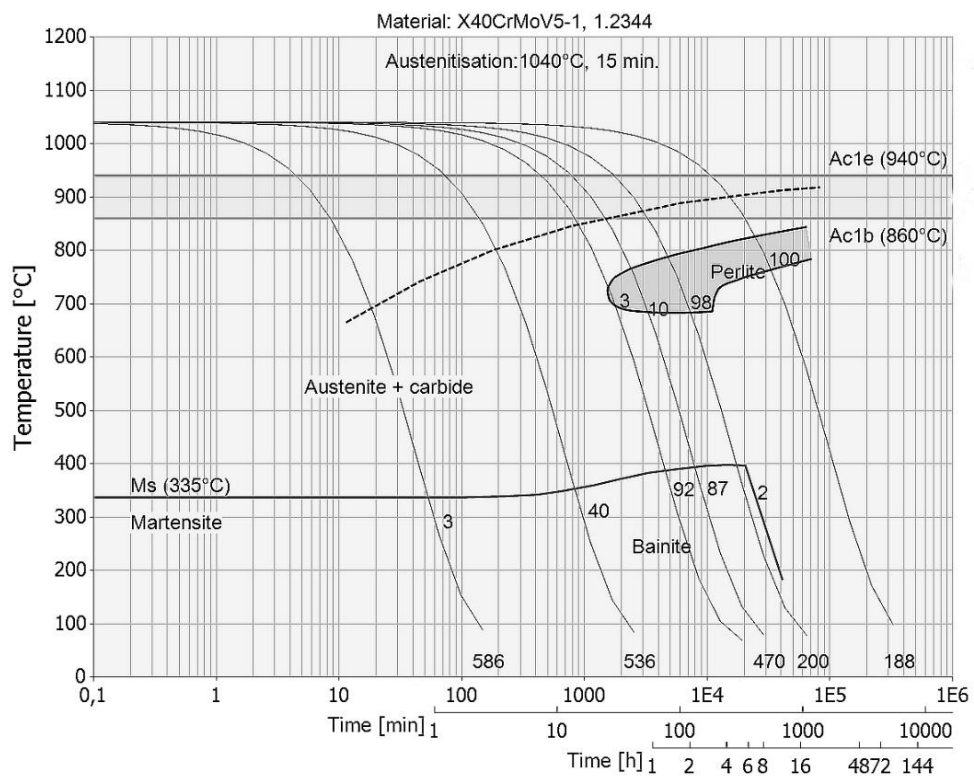
ADDITIONAL HEAT TREATMENT

Soft annealing	750 - 780°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

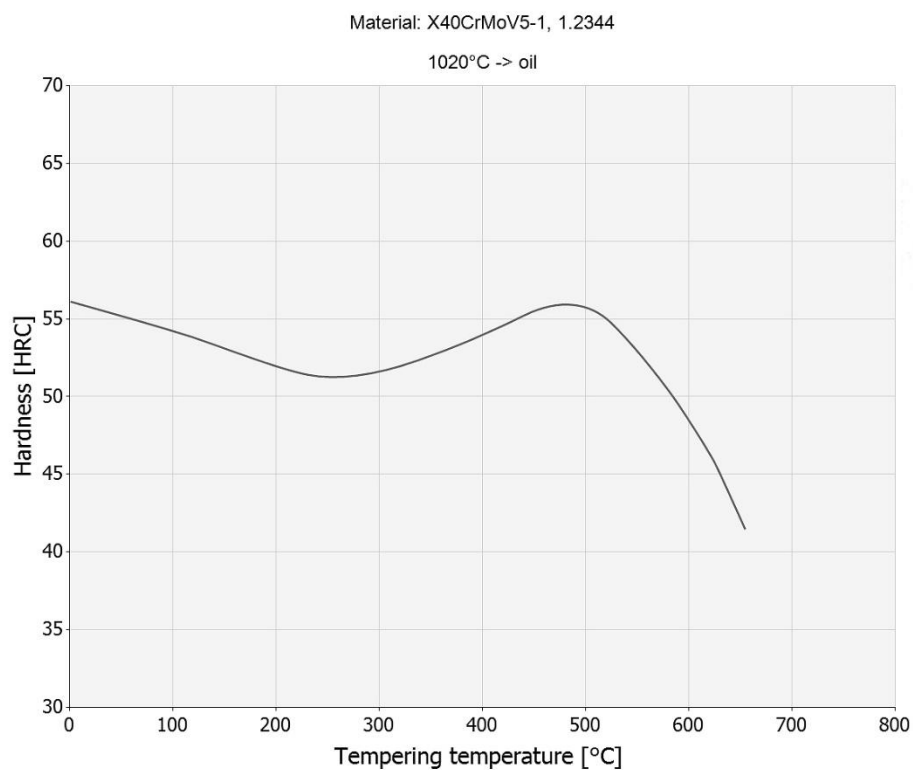
MECHANICAL PROPERTIES

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