

1.2080

X210Cr12 / NC11

COLD WORK TOOL STEEL

APPLICATION

12 % Cr-steel for high performance, cutting tools, pressing tools, deburring tools, shear blades, drawing tools, drawing dies, drawing rings, dies, taps, tools for punching and cutting sheet metal, paper and plastic, extrusion dies and punches, tools for wood and stone processing, rolls and cold rolling rolls.

CHEMICAL COMPOSITION

CHEMICAL COMPOSITION (% in weight.)

Element	C	Si	Mn	P	S	Cr
min	1.90	0.10	0.20	max	max	11.00
max	2.20	0.60	0.60	0.03	0.03	13.00

TREATMENT

Hardening	970°C ± 10°C / oil
Tempering	180°C ± 10°C (see tempering diagram)
Hardness [HRC]	min. 62

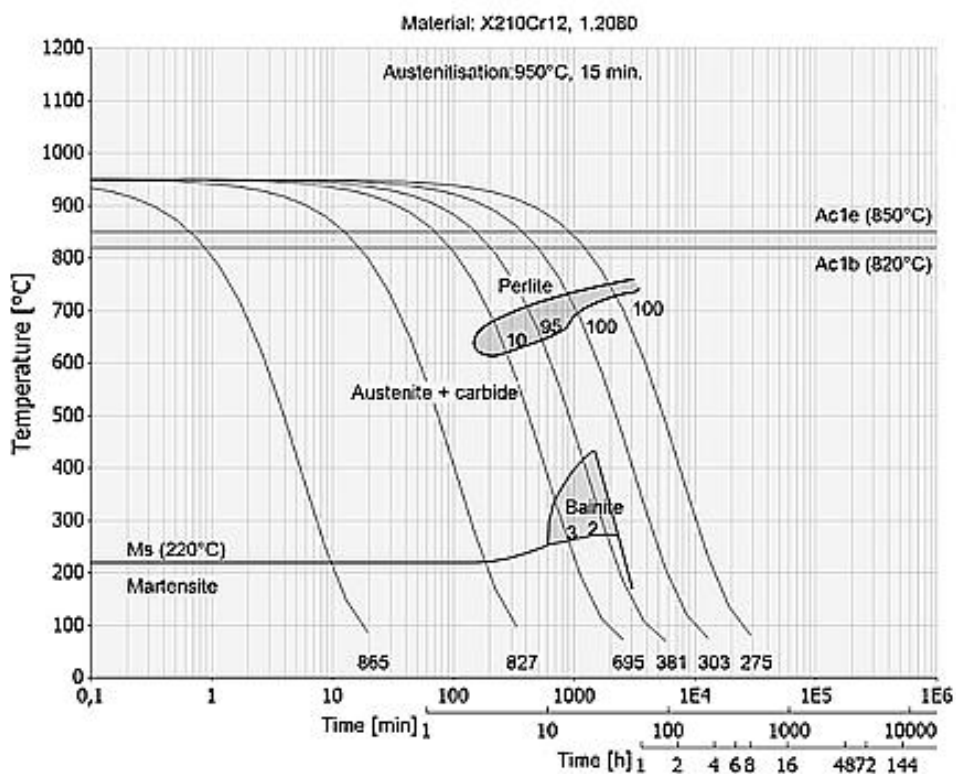
ADDITIONAL HEAT TREATMENT

Soft annealing	800 - 840°C
Stress relieving	650 - 680°C (only for soft delivery conditions)
Additional quenching media	Air, hot bath 500°C, fluidised bed, gas overpressure

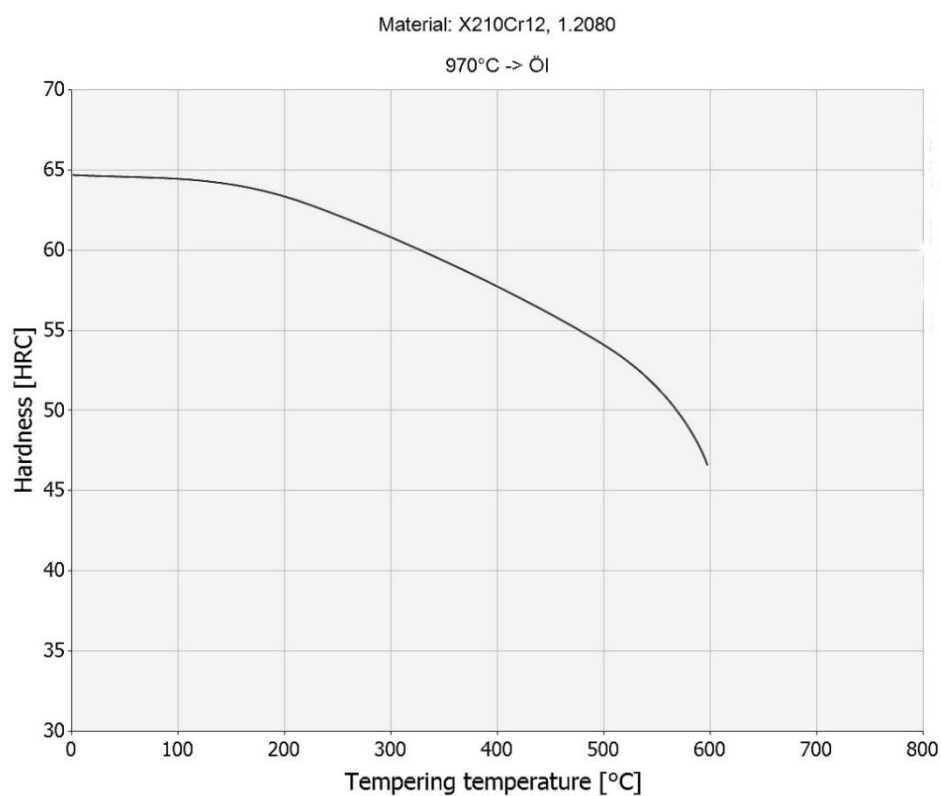
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Condition	Soft annealed (+A)	Annealed and cold drawn (+A+C)
Hardness [HB]	max. 248	max. 268

CONTINUOUS COOLING TRANSFORMATION DIAGRAM (CCT)



TEMPERING DIAGRAM



NOTE: All technical information is for reference only.