

Material specification sheet

Saarstahl - 41Cr4 - 41CrS4

Material No.:	Former brand name:	International steel grades:
1.7035	VC 140	BS: 530M40, 530A40, 530H40 AFNOR: 41Cr4, 42C4 SAE: 5140
1.7039		

Material group: Steel for quenching and tempering according to DIN EN 10083

Chemical composition: (Typical analysis in %)	Steel	C	Si	Mn	Cr	S	other
	41Cr4	0,42	0,25	0,70	1,05	<0,035	(Pb)
	41CrS4	0,42	0,25	0,70	1,05	0,020 0,035	(Pb)

Application: Heat treatable steel for driving elements as crankshafts, front vehicle axles, axle journals, steering components.

Hot forming and heat treatment:	Forging or hot rolling:	1100 - 850°C
	Normalising:	850 - 880°C/air
	Soft annealing:	680 - 720°C/furnace
	Hardening:	820 - 860°C/oil, water
	Tempering:	540 - 680°C

Mechanical Properties:	Treated for cold shearability +S:	max. 255 HB
	Soft annealed +A:	max. 241 HB

Quenched and tempered, +QT:

	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
Diameter d [mm]	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
Thickness t [mm]	< 8	8<t<20	20<t<60	60<t<100	100<t<160
0,2% proof stress R_{p0,2} [N/mm²]	min. 800	min. 660	min. 560	-	-
Tensile strength R_m [N/mm²]	1000 - 1200	900 - 1100	800 - 950	-	-
Fracture elongation A₅ [%]	min. 11	min. 12	min. 14	-	-
Reduction of area Z [%]	min. 30	min. 35	min. 40	-	-
Notch impact energy ISO-V [J]	min. 30	min. 35	min. 35	-	-