Material specification sheet

Saarstahl - CHS-2200

Material No.:	German standard:	International steel grades:
1.8152 mod.		**SAE:** **JIS:**

Material group: Hot rolled steel for quenched and tempered springs

Chemical composition:
(typical analysis at Saarstahl in %)

C	Si	Mn	P	S	Cr	Ni	V
0,53	1,45	0,72	<0,01	<0,01	0,65	0,63	0,17

Deviation in chemical composition on request

Application: Si-Cr-V alloyed quenched and tempered steel for production of springs extraordinary small sag tendency and better corrosion resistance, especially of high-stressed automotive suspension springs, produced by cold and hot forming

Hot forming and heat treatment:

Hot rolling:	1050 - 850℃
Hot forming to springs:	940 - 840℃
Normalising:	850 - 880℃/air
Soft annealing:	640 - 680℃/furnace
Hardening:	min. 840℃/oil
Tempering:	375 - 500℃/air

Mechanical properties:

Treated for cold shearability (+S):	max. 280 HB
Soft annealed (+A):	max. 248 HB
Spheroidized annealed (+AC):	max. 230 HB

Hardened and tempered (+QT), tempering temperature 375-500℃

0,2% proof stress $R_{p0,2}$ [N/mm²]	min. 1600
Tensile strength R_m [N/mm²]	1650 - 2100
Fracture elongation A_5 [%]	min. 5
Reduction of area Z [%]	min. 35
Notch impact energy ISO-V [J]	min. 8