

DIN - Material - No.	1.2085
Code	X33CrS16
Comparable standards	AISI: 420FM

Chemical composition (Typical analysis %)	C	Si	Mn	Cr	Ni
	0.30	Max 1.00	Max 1.40	16.00	Max 1.00

Steel properties

Best corrosion resistance in hardened condition with a surface polished to give a mirror finish. Magnetizable steels, good mechanical resistance and toughness, excellent for manufacturing of components that have to resist to aggressive plastics, good tool machinability thanks to its sulphur content, suitable for working in wet atmosphere and moisture, suitable for polishing, wear and corrosion proof.

Physical properties

Thermal conductivity W/(m.K) $\frac{20^{\circ}\text{C}}{18}$

Density g/cm³ $\frac{20^{\circ}\text{C}}{7.65}$

Coefficient of linear thermal expansion

$10^{-6} \text{ }^{\circ}\text{C}^{-1}$

20-100	20-200	20-300	20-400	20-500
11.0	11.1	11.2	11.8	12.0

Applications

All kinds of cutting tools - dies and die-blocks in the plastics industry such as PVC, knives, shears, surgical instruments, moulds for plastics production, as well as for surgical instruments and measuring gauges.

Heat treatment

Soft annealing ^{°C}		Cooling	Hardness HB
760 - 780		furnace	max. 230
Heat up	Preheating 1. step	Hardening from	Tempering
^{°C}	^{°C}	^{°C} - ^{°C}	in
450 - 550	800	1000 - 1050	oil, air, thermal bath

Tempering Diagram