



## SIMOLD 2085 Steel

### Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SIMOLD 2085	PK4S	1.2085	X33CrS16	-	-

### Chemical Composition (in weight %)

C	Si	Mn	Cr	Mo	Ni	V	W	Others
0.30	max. 1.00	max. 1.40	15.00-17.00	-	max. 1.00	-	-	-

### Description

Martensitic stainless steel resistant to corrosion. Steel PK4S displays the best corrosion resistance in hardened condition with a surface polished to give a mirror finish. Properties: Magnetizable steel with 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, and very stable dimensionally during heat treatment.

### 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.

### Physical properties (average values) at ambient temperature

Modulus of elasticity [ $10^3 \times \text{N/mm}^2$ ]: 212

Density [ $\text{g/cm}^3$ ]: 7.65

Thermal conductivity [ $\text{W/m.K}$ ]: 18

Electric resistivity [ $\text{Ohm mm}^2/\text{m}$ ]: 0.65

Specific heat capacity [ $\text{J/g.K}$ ]: 460

Magnetisable: Yes

### Coefficient of Linear Thermal Expansion $10^{-6} \text{ }^\circ\text{C}^{-1}$

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

### Soft Annealing

Heat to 760-780°C, cool slowly. This will produce a maximum Brinell hardness of 230.

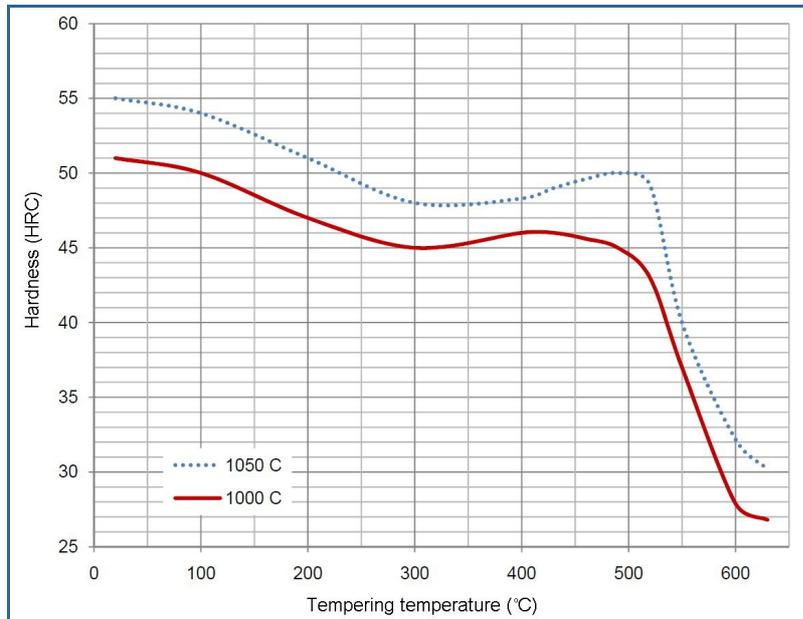
### Hardening

Preheating: 800°C. Harden from a temperature of 1000-1050°C followed by oil, or polymer cooling bath. Hardness after quenching is 51-55 HRC.

### Tempering

Tempering temperature: 150-200°C. See the tempering diagram.

## Tempering Diagrams



### Forging

Hot forming temperature: 1050-850°C, slow cooling.

### Machinability

Very good machinability.

Forms manufactured: Please see the [Dimensional Sales Program](#).

### Disclaimer

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