

**CRP 01****O1****COLD WORK TOOL STEEL****Nominal Chemical  
Analysis %**

C	.95
Mn	1.25
Cr	.50
V	.15
W	.50

**Corresponding  
Specifications****AISI O1****BS EN ISO 4957:2000****95MnWCr5**

Supersedes BS4659 B01

**WKSTOFF 1.2510****Colour Code: Red****Delivery Condition**

Annealed 229 BHN Max

**Characteristics**

O1 is a medium alloyed oil hardening tool steel giving excellent wear resistance. It hardens from a relatively low temperature and affords low distortion in hardening.

**Applications**

O1 is a general purpose tool steel suitable for many applications: press tools, jigs and fixtures, slitting cutters, gauges, tools for clipping, trimming, bending, forming and embossing and for punches and dies.

**Heat Treatment****Annealing**

760 / 780°C for 4 hours approx.

Cool slowly in the furnace at 20°C maximum per hour.

**Stress Relieving**

600 / 625°C for 2 hours approx.

Cool in still air. Always stress relieve before hardening.

**Hardening****Pre-Heating**

(i) 400°C Holding time at temperature:

1 min / mm effective section approx.

(ii) 650°C Holding time at temperature:

30 sec / mm effective section approx.

**Austenitizing**

780 / 820°C Holding time at temperature:

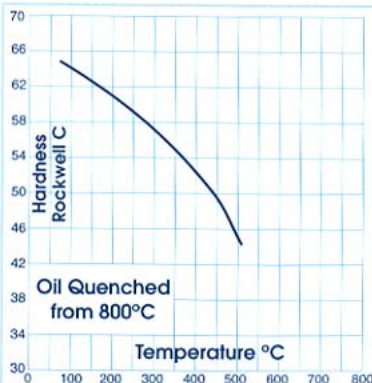
1 min / mm effective section approx.

**Quenching:-**

(i) Quench in Oil or,

(ii) Quench into Neutral Salts (Martempering) at 200 / 250°C then cool slowly in still air.

Temper immediately after quenching whilst tools are still hand warm.

**Tempering**

Consult the tempering diagram and temper according to requirements.

Temper for 1 hour / 25mm effective section for a minimum of 2 hours, then cool in still air.

For guidance, temper at:

150 / 220°C for maximum hardness

250 / 350°C for hardness with toughness

350 / 400°C for maximum toughness

Double tempering is recommended, cooling to room temperature between tempers.

NB. Lower hardness values will tend to result when hardening larger sections.