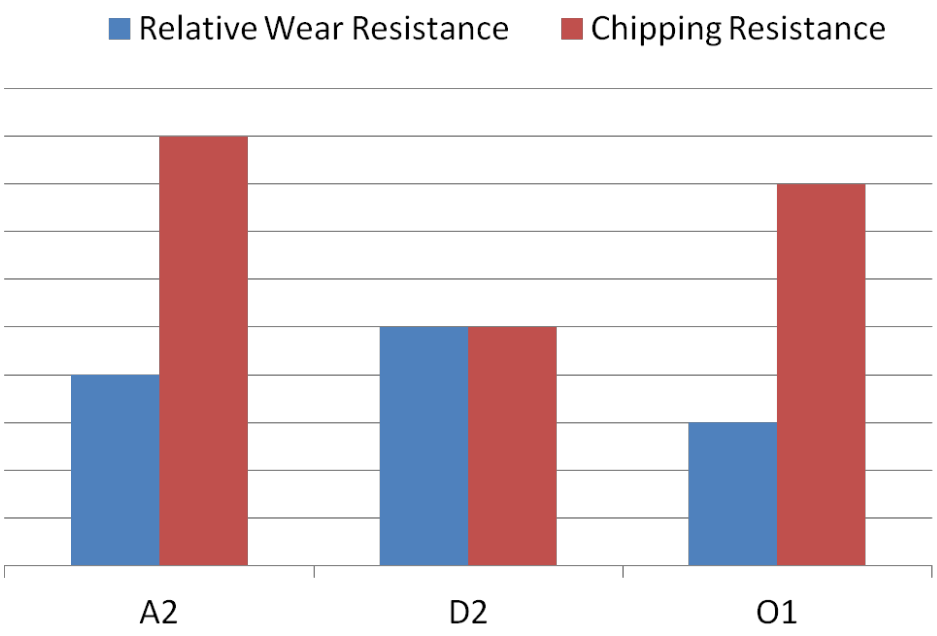
Métaux Solutions

Technical Information: O1

O1 is an oil hardening, cold work tool steel.
O1 is characterized by moderate wear resistance and relatively high hardness.
O1 is used in a variety of general purpose cold work applications

Typical Chemical Composition			
Carbon	0.90%	Chromium	0.50%
Manganese	1.25%	Tungsten	0.50%

Tool Steel Properties Comparison



Physical Properties

Modulus of Elasticity. . . . . 30 psi x 10^6 . . . . . (207 GPa)
Density. . . . . 0.283 lb/in^3
Annealed Hardness. . . . . 200-229 Brinell Hardness (BHN)

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Heat Treatment

Annealing

Heat to 1450°F, hold two hours
Slow cool 20°F/hour to 1100°F
Then air or furnace cool to room temperature

Stress Relieving

Performed prior or after machining to minimize distortion in heat treating
1100/1200°F, hold two hours
then air cool to room temperature

Hardening

Oil quenching required.

High Heat (Austenitizing)

1450/1500°F for 20 minutes at heat.

Quench

Quench in oil to 150°F .
To minimize distortion, parts may be removed at 400°F then air cooled.
Temper immediately following quench when material reaches 150°F or below.

Tempering

Minimum 400°F tempering temperature required.
Double tempering is required.
Air cool to room temperature between tempers.

Typical Heat Treat Response

Tempering Temp °F	°C	Hardening Temp 1500°F 815°C 63/65 HRC As Quenched
400	205	62 HRC
500	260	59 HRC
600	315	56 HRC
700	371	52 HRC
800	427	49 HRC
900	510	44 HRC
1000	538	40 HRC