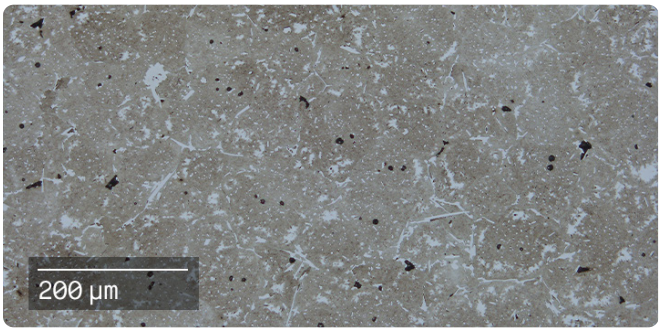
[Material Data Sheet]

D2
Corrosion Resistant Tool Steel



COMPOSITION % (AISI/SAE 4140)

Iron	Balance
Cr	11.00 – 13.00
C	1.40 – 1.60
Mo	0.70 – 1.20
V	0.00 – 1.10
Mn	0.00 – 0.60
Si	0.00 – 0.60
Ni	0.00 – 0.30
Cu	0.00 – 0.25
P	0.00 – 0.03
S	0.00 – 0.03

MECHANICAL PROPERTIES

	Standard	Production System ™ After quench and temper
Transverse Rupture Strength (GPa)	ASTM B528	2.2 ± 0.2
Quenched Hardness (HRC)	ASTM E18	63
Tempered Hardness (HRC)	ASTM E18	57
Charpy Impact Strength [1] (J)	ASTM E23	1.2
Density	g/cm^3	7.70
Surface Finish [2] (µm Ra)	ISO 4287	3 – 8

ATTRIBUTES & APPLICATIONS

- Excellent wear resistance, toughness coupled with corrosion resistance
- Good flexibility through heat treatment
- Conformally cooled cores and cavities
- Tool components for press & sintering powder metallurgy (punches & dies)
- Shear cutters
- Stamping die tool members

OTHER STANDARD DESIGNATIONS

- UNS T30402
- AMTS A681
- DIN 1.2379

1. Charpy impact specimens used were V-notched 10 x 10 mm.
2. Surface roughness measured in Z direction after sintering & sand blasting.