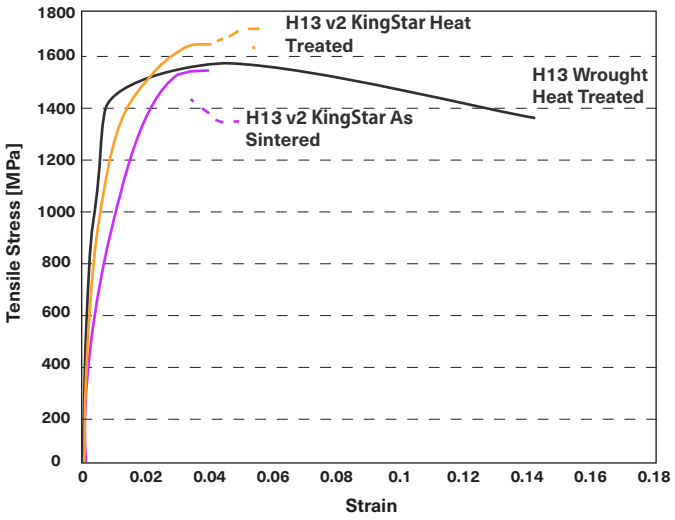
METAL MATERIAL DATASHEET

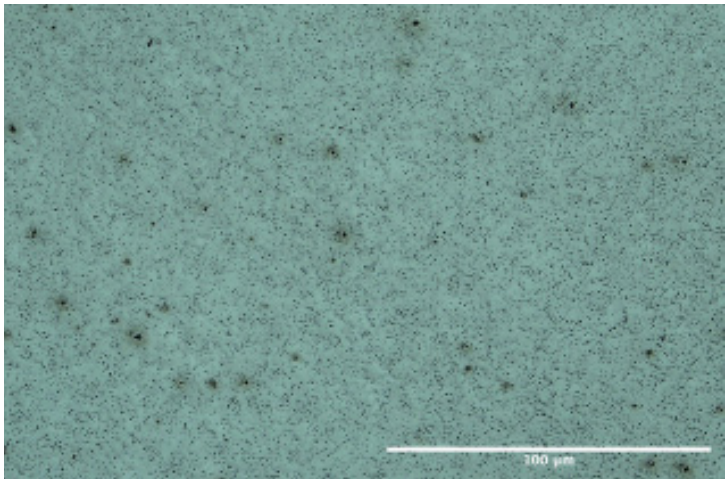
KingStarMold

H13v2

TOOL STEEL

Harder than 17-4 PH Stainless Steel and capable of maintaining material properties at high temperatures, H13 tool steel is an extremely versatile material to work with. KingStar H13 can be heat treated to 45 HRC with a UTS of 1500 MPa, and is used by KingStar customers for tool bodies, brazing fixtures, and other parts where hardness or heat resistance are required.





KingStar H13 v2 As-Sintered

H13 Tool Steel v2 printed on the Metal X, washed in the Wash-1, and sintered in the Sinter-1. As-Sintered microstructure is pictured at left.

KingStar H13 v2 Heat-Treated

H13 Tool Steel v2 printed with the Metal X system, air quenched at 1010°C, and double tempered at 600°C

Wrought H13 Heat-Treated

Wrought H13 tool steel standard from *ASM Specialty Handbook* - air quenched at 1010°C and double tempered at 600°C.

Physical Properties	Test	KingStar As-Sintered	KingStar Heat Treated	Wrought Heat Treated*
Ultimate tensile strength [MPa]	ASTM E8	1540	1680	1580
0.2% Yield strength [MPa]	ASTM E8	860	1250	1360
Elongation at Break [%]	ASTM E8	4	4.7	14
Hardness [HRC]	ASTM E18	40	45	46
Relative Density [%]	ASTM B923	94.5	94.5	100

Composition	Weight%
Chromium	4.7-5.5
Molybdenum	1.3-1.7
Silicon	0.8-1.2
Vanadium	0.8-1.2
Carbon	0.3-0.45
Manganese	0.2-0.5
Phosphorous	0.03 max
Sulfur	0.03 max
Iron	bal