





M42 Tool Steel | SKH59 | HS 2-9-1-8 | 1.3247 High Speed Steel

Speed Steel

Sae M42 Tool Steel is high cobalt high speed steel. HSS toughness and is mainly used for high toughness precision wear-resistant metal cold die, also can be used for the cutting tool and the knife in the cooling.

Supply Form of M42 Tool Steel -ASTM A681 High Speed Steel

			
Round	Plate	Sheet	Square

Supply Range of SAE M42 Tool Steel

M42 Steel Round Bar: diameter 1mm – 400mm

M42 Steel Plate: thickness 1 –500mm x width 200– 1400mm

M42 Steel Block: 210mm x 500-810mm

Chemical Composition of M42 Tool Steel Material

ASTM A681	C	Si	Mn	P	S	Cr	Mo	V	w	Co
M42/ T11342	1.05 ~ 1.15	0.15 ~ 0.65	0.15 ~ 0.40	0.03 0 Max	0.03 0 Max	3.50 ~ 4.25	9.00 ~ 10.00	0.95 ~ 1.35	1.15 ~ 1.85	7.75 ~ 8.75
DIN 17350	C	Si	Mn	P	S	Cr	Mo	V	w	Co
1.3247/S2-10-1-8	1.05 ~ 1.15	≤ 0.70	≤ 0.40	0.03 0 Max	0.03 0 Max	3.50 ~ 4.50	9.00 ~ 10.00	0.90 ~ 1.30	1.20 ~ 1.90	7.50 ~ 8.50
GB/T 1299	C	Si	Mn	P	S	Cr	Mo	V	w	Co
W2Mo9Cr4V Co8	1.05 ~ 1.15	0.15 ~ 0.65	0.15 ~ 0.40	0.03 0 Max	0.03 0 Max	3.50 ~ 4.25	9.00 ~ 10.00	0.95 ~ 1.35	1.15 ~ 1.85	7.75 ~ 8.75
JIS G4403	C	Si	Mn	P	S	Cr	Mo	V	w	Co
SKH59	1.05	≤	≤	0.03	0.03	3.50	9.00	0.90	1.20	7.50

	~ 1.15	0.70	0.40	0 Max	0 Max	~ 4.50	~ 10.00	~ 1.30	~ 1.90	~ 8.50
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M42 Tool Steel Material Equivalent and Related Specifications

USA	German	Japan	China	ISO
ASTM A681	DIN 17350	JIS G4403	GB/T 1299	ISO 4957
M42	1.3247	SKh59	W2Mo9Cr4VCo8	HS 2-9-1-8

SAE M42 Tool Steel Material Mechanical Properties

Hardness, Rockwell C (oil quenched on 1204°C, 5 minutes): 63 HRc.

Hardness, Rockwell C (oil quenched on 1177°C, 5 minutes): 65.5 HRc

Hardness, Rockwell C (oil quenched on 1163°C), 5 minutes: 65.8 HRc

Forged of M42 Steel metal material

Pre-Heating to 650-750°C, Then heat to forged temperature. Soak at 1050-1100°C, ensure heat thorough. Then start forged, the forged temperature no low than 950°C. After forging, cool slowly .

Heat Treatment of SAE M42 Steel

- **M42 HSS Steel Annealing**

Slowly heat to 870°C, then slowly Cool to 538°C(1000°F) in heat treatment furnace. Then cool in air. After annealing hardness HBS: 269 Max

- **M42 tool Steel Hardening**

M42 steel having very high hardenability and should be hardened by cooling in still air. The use of a salt bath or controlled atmosphere furnace is desirable to minimize decarburization, and if not available, pack hardening in spent pitch coke is suggested. The temperature employed is usually 1800°-1850°F, depending on size section

- **Quenching of HSS M42 Steel material**

Quenching temperature / °C | salt bath furnace: 1177

Quenching temperature / °C | controlled atmosphere furnace: 11188

The heat preservation time/min: 5 ~ 15

Quenching medium: air cooling

- **Tempering Of HSS M42 Tool Steel**

Tempering temperature / °C : 538

After tempering hardness HRC or higher: 66

Application of Sae M42 tool Steel HSS

Suitable for manufacturing various strong cutting tools with wear-resistant, resistant to impact. Advanced punching die, screw die, the toughness and complicated shape of the punch, etc. Roll cutting tool industry: scraper, serrated knife, iron knives, drill bits, etc.

Forging industry: forging die.

Screw industry: heading forming mould, such as teeth, punch

Quality Assured of Sae M42 Steel

Quality assured by ISO 9001:2008 quality management system. Our all M42 tool steel all had by SEP 1921-84 ultrasonic inspection (UT Test). Quality Grade: E/e, D/d, C/c.

If you have any M42 Tool steel inquiry and question for Price, Application, hot treatment, Please don't hesitate contact us.

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