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全球钢号百科！

Global Steel Grade Encyclopedia

涵盖的行业或国家与地区类别

ASTM 国材料与试验协会　GJB 国家军用标准　SAE 动力机械工程师协会　EU 前欧洲标准化　AISI 美国钢铁学会　DIN 德国工业标准　AMS 国空航天材料规范　ISO 国际标准　JASO 日本汽车标准组织

EN　JB　UNS　UNI　ASME　SS　GB　JIS

Rapidur 3247

HS2-9-1-8

C 1.08 **Cr** 4.10 **Mo** 9.50 **V** 1.20 **W** 1.50 **Co** 8.00

Steel properties

High-carbon, high-speed steel based on molybdenum. Characterized by high wear resistance, red hardness and toughness. As a result of its low vanadium content, this grade exhibits good grindability.

Standards

AISI M42 **AFNOR** Z110DKCWV

Applications

For tools subject to severe mechanical wear (e.g. in case of small cross-section cuts at high cutting speeds). Particularly suitable for die-sinking cutters, milling cutters and engraving machines including gravers as well as for tool bits in automatic lathes. Also suitable for non-cutting shaping (e.g. cold extrusion rams and tools employed in machining materials for the aviation industry such as titanium alloys).

Heat treatment

Soft annealing °C	**Cooling**	**Hardness HB**
820 – 860	Furnace	max. 277

Stress-relief annealing °C	**Cooling**
630 – 650	Furnace

1st pre-heating °C	**2nd and 3rd pre-heating °C**	**Hardening[1] °C**	**Quenching**	**Tempering °C**	**Hardness after tempering HRC**
up to approx. 400 in an air-circulating furnace	a) 850 b) 850 and 1050	1160 – 1190	a) Saltbath, 550 °C b) Oil c) Air	at least three times 530 – 560	66 – 69

[1] For cold-forming tools with a complex geometry, a hardening temperature at the lower end of the quoted range is recommended. The stated hardening temperatures apply to saltbath hardening only. For vacuum hardening, we suggest a reduction of 10 °C to 30 °C.