

MATERIAL DATA SHEET · CHROME-MOLY ALLOY STEEL

ASTM A234 WP9 Cl.1 — Chemical Composition & Mechanical Properties

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ASTM A234 WP9 Cl.1 is a chrome-moly alloy steel grade for wrought butt-weld fittings (UNS K90941, EN / W.Nr 1.7386). It is also known as 9Cr-1Mo. This sheet summarises its chemical composition limits, minimum mechanical properties, heat treatment and typical service. Teshi Group manufactures flanges and fittings in this grade.

At a glance

Material family	Chrome-moly alloy steel
Product form	Wrought butt-weld fittings
UNS	K90941
EN / W.Nr	1.7386
Also known as	9Cr-1Mo

Mechanical properties

Tensile strength, min	415 MPa
Yield strength (0.2 % offset), min	205 MPa
Elongation, min	22 %
Hardness	217 HBW max

Chemical composition (weight %)

C 0.15 max	Mn 0.30–0.60	P 0.030 max	S 0.030 max	Si 1.00 max
Cr 8.0–10.0	Mo 0.90–1.10			

Single values are maximums unless shown as a range or “min”.

Heat treatment

Annealed, or normalised and tempered

Typical service

9Cr-1Mo butt-weld fittings

International equivalents (nearest)

USA — ASTM / ASME	ASTM A234 WP9 Cl.1 · ASME SA-234 WP9 Cl.1
USA — UNS	K90941
Europe — EN designation	X11CrMo9-1 (EN 10216-2)
Europe — W.Nr	1.7386
Japan — JIS	STPA26 / SFVAF9
China — GB / NB	12Cr9MoI (GB/T 9948) / 1Cr9MoI
China — old GB designation	1Cr9MoI
UK — BS (withdrawn)	BS 3604 629

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